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1876 HAWKINS, CÆSAR HENRY, F.R.S., Sergeant Surgeon to H.M. the Queen, and Consulting Surgeon to St. George's Hospital: 26 Grosvenor Street, W.

1874 PIRRIE, WILLIAM, M.D., L.R.C.S. Ed., Professor of Surgery at the University of Aberdeen, &c.

1874 STOKES, WILLIAM, M.D., D.C.L, L.L.D., F.R.S., Regius Professor of Physic at Dublin University, &c.

1876 WATSON, SIR THOMAS, BART., M.D., D.C.L., L.L.D., F.R.S., Physician in Ordinary to H.M. the Queen; Consulting Physician to King's College Hospital: 16 Henrietta Street, Cavendish Square, W. (Pres. 1867–8.)

1876 WILLIAMS, CHARLES JAMES BLASIUS, M.D., F.R.S., Physician Extraordinary to H.M. the Queen; Consulting Physician to the Hospital for Consumption and Diseases of the Chest: 47 Upper Brook Street.

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1870 †ALLBUTT, THOMAS CLIFFORD, M.D., F.L.S., Lecturer on the Practice of Physic at the Leeds School of Medicine, and Physician to the Leeds General Infirmary: 38 Park Square, Leeds.

1871 ALTHAUS, JULIUS, M.D.: 18 Bryanston Street, Portman Square, W.

1868 ANDERSON, JOHN FORD, M.D.: 28 Buckland Crescent, Belsize Park, N.W.

Orig Memb ANDREW, JAMES, M.D., Physician to, and Lecturer on Medicine at, St. Bartholomew's Hospital: 22 Harley Street, Cavendish Square, W. (C. 1872–4.)

Orig Memb ARNOTT, HENRY. (C. 1872–5.)

Orig Memb BAKER, W. MORRANT, Assistant Surgeon to, and Lecturer on Physiology and General Anatomy at, St. Bartholomew's Hospital; Surgeon to the Evelina Hospital for Sick Children: 26 Wimpole Street, Cavendish Square, W. (C. 1873.)

1868 BANTOCK, GEORGE GRANVILLE, M.D.: 44 Cornwall Road, Westbourne Park, W.

Orig Memb BARCLAY, ANDREW WHYTE, M.D., Physician to, and Lecturer on Medicine at, St. George's Hospital; Medical Officer of Health for Chelsea: 23A Bruton Street, Berkeley Square, W. (C. 1870–1.)

ELECTED

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1869 BARKER, EDGAR: 21 Hyde Park Street, W. (C. 1875.)

1875 BARLOW, THOMAS, M.B., Assistant Physician to the Charing Cross Hospital, and to the Hospital for Sick Children, Great Ormond Street: 10 Montague Street, Russell Square, W.C.

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1872 FOX, TILBURY, M.D., Physician to the Skin Department of University College Hospital: 14 Harley Street, W.

Orig Memb FOX, WILSON, M.D., F.R.S., Physician Extraordinary to H.M. the Queen; Holme Professor of Clinical Medicine in University College, and Physician to University College Hospital: 67 Grosvenor Street, W. (C. 1873.)

1868 GANT, FREDERICK JAMES, Surgeon to the Royal Free Hospital: 16 Connaught Square, W.

1868 GLOVER, JAMES GREY, M.D., Hon. Surgeon to the Holloway and North Islington Dispensary: 33 Compton Terrace, Islington, N.

1875 GODLEE, RICKMAN JOHN, M.S., M.B., Assistant Surgeon to Charing Cross Hospital: 22 Henrietta Street, Cavendish Square, W.

1875 GOODHART, JAMES FREDERICK, M.D., Medical Registrar and Demonstrator of Anatomy at Guy's Hospital: 27 Weymouth Street, Portland Place, W.

1869 GOODRIDGE, HENRY FREDERICK AUGUSTUS, M.D., Physician to the Bath Royal United Hospital: Bath.

1871 GOVER, ROBERT M., M.B., Medical Officer to the Millbank Prison, Millbank, S.W.

1875 GOWERS, WILLIAM RICHARD, M.D., Assistant Physician to University College Hospital: 50 Queen Anne Street, Cavendish Square, W.

ELECTED

1868 GREEN, T. HENRY, M.D., Physician to, and Lecturer on Pathology at, the Charing Cross Hospital: 74 Wimpole Street, W.

1875 GREENFIELD, WILLIAM SMITH, M.D., Demonstrator of, and Joint-Lecturer on, Morbid Anatomy at St. Thomas's Hospital: 93 Wimpole Street, W.

Orig Memb GREENHALGH, ROBERT, M.D., Physician Accoucheur to, and Lecturer on Midwifery at, St. Bartholomew's Hospital: 72 Grosvenor Street, W.

Orig Memb GREENHOW, EDWARD HEADLAM, M.D., F.R.S. (*Treasurer*), Physician to, and Lecturer on Medicine at, the Middlesex Hospital: 14A Manchester Square, W. (T. 1867–75.)

1874 GRIGG, WILLIAM CHAPMAN, M.D., Assistant Obstetric Physician to the Westminster Hospital; Physician to the In-Patients, Queen Charlotte's Lying-in Hospital; Assistant Physician to the Victoria Hospital for Children: 6 Curzon Street, Mayfair, W.

1868 †GUENEAU DE MUSSY, HENRI, M.D.: 15 Rue du Cirque, Paris.

Orig Memb GULL, Sir WILLIAM WITHEY, Bart., M.D., D.C.L., F.R.S., Physician Extraordinary to the Queen: 74 Brook Street, W. (V.P. 1868–70, P. 1871–2.)

1870 GWYNN, EDMUND, M.D.: 6 Hampstead Hill Gardens, N.W.

Orig Memb HABERSHON, SAMUEL OSBORNE, M.D., Physician to, and Lecturer on the Practice of Medicine at, Guy's Hospital: 70 Brook Street, W. (C. 1873.)

1875 HALE, C.D.B.: 3 Longridge Road, Earl's Court, W.

1872 HARRIS, HENRY, M.D.: Trengweath, Redruth, Cornwall.

1873 HARLEY, GEORGE, M.D., F.R.S.: [25 Harley Street, Cavendish Square, W.]

Orig Memb HARLEY, JOHN, M.D., F.L.S. (C.), Assistant Physician to St. Thomas's Hospital: 39 Brook Street, Grosvenor Square, W. (C. 1875.)

1873 HARRER, CHARLES, M.D., Physician to the German Hospital, Eastern Dispensary: 34 City Road, Finsbury Square, E.C.

Orig Memb HART, ERNEST: 37 Great Queen Street, W.C. (C. 1867–8.)

1869 HAWARD, J. WARRINGTON (C.), Assistant Surgeon to St. George's Hospital; Assistant Surgeon to the Hospital for Sick Children: 5 Montagu Street, Portman Square, W. (C. 1876.)

ELECTED

1868 HAY, THOMAS B.: 43 Caledonian Road, N.

Orig Memb HEATH, CHRISTOPHER, Surgeon to University College Hospital, and Holme Professor of Clinical Surgery in University College: 36 Cavendish Square, W. (C. 1867–71.)

1868 HESLOP, THOMAS PRETIOUS, M.D., Physician to the Children's Hospital, Birmingham.

1868 HEWAN, ARCHIBALD, M.D.: 9 Chester Square, S.W.

Orig Memb HEWETT, PRESCOTT GARDNER, F.R.S., Surgeon Extraordinary to H.M. the Queen; Consulting Surgeon to St. George's Hospital: 1 Chesterfield Street, Mayfair, W. (V.P. 1869–71, P. 1873–4.)

Orig Memb HEWITT, GRAILY, M.D., Professor of Midwifery in University College, and Obstetric Physician to University College Hospital: 36 Berkeley Square, W.

Orig Memb HICKS, J. BRAXTON, M.D., F.R.S., F.L.S. (C.), Physician Accoucheur to, and Lecturer on Midwifery and the Diseases of Women and Children at, Guy's Hospital: 24 George Street, Hanover Square, W. (C. 1875–76.)

1876 HIGGENS, CHARLES, Assistant Ophthalmic Surgeon to Guy's Hospital: 38 Brook Street, Grosvenor Square, W.

1868 HILL, BERKELEY, M.B., Professor of Clinical Surgery in University College, London, Surgeon to University College Hospital, and Surgeon to the Lock Hospital: 55 Wimpole Street, W. (C. 1870–1.)

1868 HILL, THOMAS HARVEY: 4 Stanhope Terrace, Bayswater, W.

Orig Memb HILTON, JOHN, F.R.S., Surgeon Extraordinary to H.M. the Queen; Consulting Surgeon to Guy's Hospital: 10 New Broad Street, E.C. (V.P. 1867-9).

1874 HOLDERNESS, WILLIAM BROWN, Surgeon to the Huntingdon County Hospital: Wykeham House, Huntingdon.

1868 †HOLMAN, CONSTANTINE, M.D.: Reigate, Surrey.

1868 HOLMAN, WILLIAM HENRY, M.B.: 68 Adelaide Road South, Hampstead, N.W.

Orig Memb HOLMES, TIMOTHY, Surgeon to, and Lecturer on Surgery at, St. George's Hospital; Surgeon-in-Chief to the Metropolitan Police Force: 18 Great Cumberland Place, Hyde Park, W. (C. 1867–9, V.P. 1873–5.)

Orig Memb HOLT, BARNARD WIGHT, Consulting Surgeon to, and Lecturer on Clinical Surgery at, the Westminster Hospital; Medical Officer of Health for Westminster: 14 Savile Row, W.

Elected	
Orig Memb	Holthouse, Carsten, Surgeon to, and Lecturer on Surgery at, the Westminster Hospital; Consulting Surgeon to the South London Ophthalmic Hospital: 7 George Street, Hanover Square, W. (C. 1870–2.)
1873	Hope, William, M.D., Senior Physician to Queen Charlotte's Lying-in Hospital: 5 Bolton Row, Mayfair, W.
1871	Houghton, Henry G., L.K.Q.C.P. Ireland: 6 Mount Street, Grosvenor Square, W.
Orig Memb	Hulke, John Whitaker, F.R.S., Surgeon to, and Lecturer on Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 10 Old Burlington Street, W. (C. 1867–9.)
Orig Memb	Humphry, George Murray, M.D., F.R.S., Professor of Anatomy in the University of Cambridge, and Surgeon to Addenbrooke's Hospital, Cambridge. (V.P. 1867–70.)
1871	†Hunt, Ezra: 18 Belmont, Bath.
Orig Memb	Hutchinson, Jonathan (V.P.), Surgeon to, and Lecturer on Surgery at, the London Hospital; Surgeon to the Hospital for Diseases of the Skin, and Surgeon to the Royal London Ophthalmic Hospital: 15 Cavendish Square, W. (C. 1867–8, V.P. 1875.)
1875	Irvine, James Pearson, M.D., Assistant Physician to, and Lecturer on Forensic Medicine at the Charing Cross Hospital: 3 Mansfield Street, Cavendish Square, W.
Orig Memb	Jackson, J. Hughlings, M.D., Physician to, and Lecturer on Physiology at, the London Hospital; Physician to the National Hospital for the Paralysed and Epileptic: 3 Manchester Square, W. (C. 1872–3.)
Orig Memb	Jenner, Sir William, Bart., M.D., K.C.B., D.C.L., F.R.S. (*President*), Physician in Ordinary to H.M. the Queen and to H.R.H. the Prince of Wales; Physician to University College Hospital: 63 Brook Street, W. (V.P. 1867–70, P. 1875.)
1875	Jesset, Frederick Bowreman: Pier Road, Erith, Kent.
Orig Memb	Johnson, George, M.D., F.R.S. (V.P.), Physician to King's College Hospital: 11 Savile Row, W. (V.P. 1874–5.)
Orig Memb	Jones, Sydney, M.B., Surgeon to, and Lecturer on Surgery at, St. Thomas's Hospital: 10B St. Thomas's Street, Southwark, S.E. (C. 1867–8.)
1872	Jones, Thomas, M.D., Assistant Physician, Victoria Hospital for Sick Children: 19 Chapel Street, Belgrave Square, S.W.
Orig Memb	Kelly, Charles, M.D., Medical Officer of Health for the West Sussex District: Worthing, Sussex.

ELECTED

1868 KESTEVEN, WILLIAM B., M.D.: 401 Holloway Road, N. (C. 1870–2.)

1873 LACY, C. DE LACY, Obstetric Assistant, St. George's Hospital.

1868 LANGMORE, JOHN C., M.B.: 20 Oxford Terrace, Hyde Park, W. (C. 1872–5.)

Orig Memb LANGTON, JOHN, Assistant Surgeon to, and Demonstrator of Anatomy at, St. Bartholomew's Hospital: 2 Harley Street, W.

1869 LAWRENCE, JAMES E.: High Street, Wandsworth, S.W.

Orig Memb LAWSON, GEORGE (C.), Surgeon to, and Lecturer on Practical Surgery at, the Middlesex Hospital, and Surgeon to the Royal London Ophthalmic Hospital: 12 Harley Street, W. (S. 1871–3, C. 1874–5.)

1869 LEACH, HARRY, Medical Officer of the Port of London: 42 Lupus Street, St. George's Square, S.W.

1876 LEE, ALFRED ROBERT: 30 Queen Street, Cheapside, E.C.

Orig Memb LEE, HENRY, Surgeon to, and Lecturer on Clinical Surgery at, St. George's Hospital: 9 Savile Row, W. (V.P. 1870–2.)

1874 LEE, ROBERT JAMES, M.D., Assistant Physician to the Hospital for Sick Children: 28 Maddox Street, Bond Street, W.

1868 LITTLE, LOUIS STROMEYER: China.

1875 LIVEING, EDWARD, M.D.: 52 Queen Anne Street, Cavendish Square, W.

1872 LIVEING, ROBERT, M.D.: 11 Manchester Square, W.

1871 MACCORMAC, WILLIAM, Surgeon to and Lecturer on Surgery at, St. Thomas's Hospital: 13 Harley Street, W.

Orig Memb MACKENZIE, MORELL, M.D., Physician to the Hospital for Diseases of the Throat: 19 Harley Street, Cavendish Square, W.

1875 MACNAMARA, CHARLES, Surgeon to the Westminster Hospital: 13 Grosvenor Street, W.

1874 MAHOMED, FRED. AKBAR, St. Mary's Hospital, W.

Orig Memb †MARCET, WILLIAM, M.D., F.R.S.: Villa Bianca, Cannes. (C. 1867–9.)

1868 MARSH, F. HOWARD (C.), Assistant Surgeon to St. Bartholomew's Hospital: 36 Bruton Street, Berkeley Square, W. (C. 1876.)

1875 MARSHALL, F. J., Resident Medical Officer, St. George's Hospital, W.

Elected	
Orig Memb	Maunder, Charles F., Surgeon to, and Lecturer on Clinical Surgery, and Demonstrator of Operative Surgery at, the London Hospital: 16 Queen Anne Street, W. (C. 1870–1.)
1868	†May, Edward Hooper, M.D.: High Cross, Tottenham, Middlesex, N.
1868	Meadows, Alfred, M.D., Physician Accoucheur to, and Lecturer on Midwifery at, St. Mary's Hospital: 27 George Street, Hanover Square, W. (C. 1871–4.)
1873	Mickle, William Julius, M.D., Physician Superintendent, Grove Hall Asylum, Bow, E.
1874	Morgan, John Hammond: 12 Chapel Street, Park Lane, W.
Orig Memb	Moxon, Walter, M.D., F.L.S. (C.), Physician to, and Lecturer on Pathology and Demonstrator of Morbid Anatomy at, Guy's Hospital: 6 Finsbury Circus, E.C. (C. 1874–6.)
Orig Memb	Murchison, Charles, M.D., LL.D., F.R.S., Physician to, and Lecturer on Medicine at, St. Thomas's Hospital, Consulting Physician to the London Fever Hospital: 79 Wimpole Street, W. (C. 1867–9.)
1875	Murphy, Shirley F., London Fever Hospital, Liverpool Road, Islington, N.
1871	Murray, John, M.D., Inspector-General of Hospitals: 17 Westbourne Square, W.
1868	Myers, Arthur Bowen Richards, Surgeon to 1st Battalion of the Coldstream Guards: Vincent Square, Westminster, S.W.
1873	Myrtle, Andrew S., M.D.: Harrogate.
1874	Nankivell, Arthur Wolcot, Resident Surgeon, St. Bartholomew's Hospital, Chatham.
1875	Nettleship, Edward: 4 Wimpole St., Cavendish Sq., W.
Orig Memb	Norton, Arthur Trehern (C.), Assistant Surgeon to, and Lecturer on Anatomy at, St. Mary's Hospital: 6 Wimpole Street, W. (C. 1874–6.)
Orig Memb	Nunn, Thomas William, Surgeon to the Middlesex Hospital: 8 Stratford Place, Oxford Street, W. (C. 1873–4.)
Orig Memb	Ogle, John William, M.D., Physician to St. George's Hospital: 30 Cavendish Square, W. (C. 1867–8.)
1868	†Ogle, William, M.D., Physician to the Derbyshire General Infirmary: 98 Friar Gate, Derby.
1869	Oldfield, E., M.D.: Surinam.
1868	Oppert, Francis, M.D.: Germany.
1875	Page, Herbert W., M.C., M.B., Assistant Surgeon to St. Mary's Hospital: 28 New Cavendish Street, W.

ELECTED

Orig Memb PAGET, Sir JAMES, Bart., D.C.L., F.R.S., Sergeant-Surgeon Extraordinary to H.M. the Queen; Surgeon in Ordinary to H.R.H. the Prince of Wales; Consulting Surgeon to St. Bartholomew's Hospital: 1 Harewood Place, Hanover Square, W. (V.P. 1867–8, P. 1869–70.)

1873 PARKER, ROBERT WILLIAM: 8 Old Cavendish Street, W.

Orig Memb PAVY, FREDERICK WILLIAM, M.D., F.R.S., Physician to, and Lecturer on Physiology at, Guy's Hospital: 35 Grosvenor Street, W. (C. 1869–71.)

Orig Memb PEACOCK, THOMAS BEVILL, M.D., Physician to St. Thomas's Hospital, Consulting Physician to the City of London Hospital for Diseases of the Chest: 20 Finsbury Circus, E.C. (C. 1867–8, V.P. 1869–71.)

1874 PHILLIPS, CHARLES DOUGLAS F., M.D.: 107 Lancaster Gate, Hyde Park, W.

Orig Memb PICK, THOMAS PICKERING (*Hon. Secretary*), Assistant Surgeon to, and Lecturer on Anatomy at, St. George's Hospital; Surgeon to the Belgrave Hospital for Children. 7 South Eaton Place, Eaton Sq., S.W. (S. 1874–6.)

1871 †PLAYNE, ALFRED, M.B.: Maidenhead.

Orig Memb POLLOCK, A. JULIUS, M.D., Physician to the Charing Cross Hospital; Physician to the Foundling Hospital: 85 Harley Street, Cavendish Square, W.

1875 POLLOCK, GEORGE DAVID, Surgeon in Ordinary to H.R.H. the Prince of Wales; Surgeon to St. George's Hospital: 36 Grosvenor Street, W.

1868 POLLOCK, JAMES EDWARD, M.D., Physician to the Hospital for Consumption and Diseases of the Chest: 52 Upper Brook Street, Grosvenor Square, W.

1871 POORE, GEORGE VIVIAN, M.D., Assistant Physician to University College Hospital: 30 Wimpole Street, W.

1873 PORT, HEINRICH, M.D., Assistant Physician to the German Hospital: 10 Finsbury Place North, E.C.

Orig Memb POWELL, R. DOUGLAS, M.D. (C.), Assistant Physician to Charing Cross Hospital; Physician to the Hospital for Consumption and Diseases of the Chest: 15 Henrietta Street, Cavendish Square, W. (C. 1874–6.)

1868 PRENTIS, CHARLES, Assistant Surgeon, Bengal Army.

Orig Memb QUAIN, RICHARD, M.D., F.R.S., Consulting Physician to the Hospital for Consumption and Diseases of the Chest: 67 Harley Street, W. (C. 1867–9.)

Orig Memb RAMSKILL, J. SPENCE, M.D., Physician to, and Lecturer on Medicine at, the London Hospital; Senior Physician to the National Hospital for the Paralysed and Epileptic: 5 St. Helen's Place, Bishopsgate Street, E.C.

Elected	
1873	Ransford, Gifford: 27 Gloucester Place, Hyde Park, W.
1868	Rasch, Adolphus A., M.D., Physician for Diseases of Women to the German Hospital: 7 South Street, Finsbury Square, E.C.
1874	Ree, Frederick, St. George's Hospital, Hyde Park Corner, S.W.
Orig Memb	Rees, George Owen, M.D., F.R.S., Consulting Physician to Guy's Hospital: 26 Albemarle Street, W. (V.P. 1871–3.)
1868	Reeves, Henry A., Assistant Surgeon to the London Hospital: 27A Finsbury Square, E.C.
1868	Rendle, James D., M.D., Medical Officer to the Government Convict Prison, Brixton: Park Hill, Clapham Park, S.W. (C. 1869–70.)
Orig Memb	Reynolds, John Russell, M.D., F.R.S., Examiner in Medicine at the University of London; Professor of the Principles and Practice of Medicine in University College; Physician to University College Hospital: 38 Grosvenor Street, W. (C. 1867–8.)
1868	Rice, Michael W., M.D. (C.): 34 Cadogan Place, S.W. (C. 1876.)
Orig Memb	Ringer, Sydney, M.D., Professor of Materia Medica in University College, and Physician to University College Hospital: 15 Cavendish Place, W. (C. 1871–2.)
1873	†Roberts, David Lloyd, M.D., Physician to St. Mary's Hospital, Manchester: 23 St. John Street, Manchester.
1875	Rogers, William Richard, M.D.: 56 Berners Street, Oxford Street, W.
Orig Memb	Rouse, James (C.), Surgeon to St. George's Hospital, and to the Royal Ophthalmic Hospital, Charing Cross: 2 Wilton Street, Grosvenor Place, S.W. (C. 1875.)
1874	Rowland, Edward R.: Pelham Lodge, Isleworth.
1868	Sanderson, Hugh James, M.D.: 26 Upper Berkeley Street, W.
Orig Memb	Sanderson, John Burdon, M.D., F.R.S., Jodrell Professor of Human Physiology in University College: 49 Queen Anne Street, W. (S. 1867–9, C. 1870, V.P. 1871–3.)
1873	Savage, George Henry, M.D.: Bethlehem Royal Hospital, Lambeth Road, S.E.
1869	Sedgwick, Leonard William, M.D.: 2 Gloucester Terrace, Hyde Park, W.
1875	Sherwood, Arthur Paul, St. George's Hospital.
1876	Shuter, James, M.B., St. Bartholomew's Hospital, and Lawn House, Tufnell Park Road, Holloway, N.

ELECTED

Orig Memb SIBLEY, SEPTIMUS WILLIAM: 4 Savile Row, W. (C. 1871–4.)

Orig Memb SIMON, JOHN, D.C.L., F.R.S., Surgeon to St. Thomas's Hospital: 40 Kensington Square, W. (V.P. 1867–70.)

1873 SIMPSON, GEORGE M., M.D., C.M.: Hampstead Lane, Highgate, N.

1872 SLIGHT, GEORGE, M.D.: 25 Brewer St., Regent St., W.

1876 SMITH, BARTON HENRY LIDDELL, M.B., C.M.: 3 Queen Street, May Fair, W.

1875 SMITH, GILBART, M.A., M.B., Physician to the Royal Hospital for Diseases of the Chest, City Road: 68 Harley Street, Cavendish Square, W.

1868 SMITH, HEYWOOD, M.D., Physician to the Hospital for Women: 2 Portugal Street, Grosvenor Square, W.

1868 SMITH, PROTHEROE, M.D., Physician to the Hospital for Women: 42 Park Street, Grosvenor Square, W.

Orig Memb SMITH, THOMAS, Surgeon to, and Lecturer on Clinical Surgery at, St. Bartholomew's Hospital, and Surgeon to the Hospital for Sick Children: 5 Stratford Place, Oxford Street, W. (C. 1869–71.)

1873 SMITH, WILLIAM JOHNSON, Surgeon to the Seamen's Hospital, Greenwich, S.E.

1873 SMITH, WILLIAM WILBERFORCE, M.D.: 2 Eastbourne Terrace, Bishop's Road, W.

1868 SNOW, WILLIAM V., M.D.: Richmond Gardens, Bournemouth.

Orig Memb SOUTHEY, REGINALD, M.D. (C.), Physician to, and Lecturer on Forensic Medicine and Hygiene at, St. Bartholomew's Hospital: 6 Harley Street, Cavendish Square, W. (C. 1867–70, 1876, S. 1873–75.)

1876 SQUIRE, BALMANNO, M.B.: 24 Weymouth Street, Portland Place, W.

Orig Memb STEWART, ALEXANDER PATRICK, M.D., Consulting Physician to the Middlesex Hospital: 75 Grosvenor Street, W. (V.P. 1872-74.)

1871 STEWART, WILLIAM EDWARD: 16 Harley Street, Cavendish Square, W.

1874 STIRLING, EDWARD C., M.B.

1872 SUTHERLAND, HENRY, M.D., Lecturer on Insanity, Westminster Hospital: 6 Richmond Terrace, Whitehall, S.W.

1868 SUTRO, SIGISMUND, M.D., Senior Physician to the German Hospital: 37A Finsbury Square, E.C.

Orig Memb SUTTON, HENRY GAWEN, M.B., Physician to, and Lecturer on Pathology at, the London Hospital; and Physician to the City of London Hospital for Diseases of the Chest: 9 Finsbury Square, E.C.

Elected	
1876	Symonds, Horatio P.: 35 Beaumont Street, Oxford.
1868	Tatham, John, M.D., Assistant Physician to the Hospital for Consumption and Diseases of the Chest: 1 Wilton Place, Knightsbridge, S.W.
1875	Taylor, Frederick, M.D., Assistant Physician to Guy's Hospital: 15 St. Thomas's Street, Southwark, S.E.
Orig Memb	Teevan, William F., Surgeon to the West London Hospital: 10 Portman Square, W.
Orig Memb	Thompson, Edmund Symes, M.D., Physician to the Hospital for Consumption and Diseases of the Chest; Gresham Professor of Medicine: 3 Upper George Street, Portman Square, W.
Orig Memb	Thompson, Sir Henry, Knt., Surgeon Extraordinary to H.M. the King of the Belgians; Emeritus Professor of Clinical Surgery in University College: 35 Wimpole Street, W. (C. 1867–8.)
Orig Memb	Thompson, Henry, M.D. (V.P.), Fellow of St. John's College, Cambridge; Senior Physician to the Middlesex Hospital: 53 Queen Anne Street, W. (V.P. 1875.)
1872	Thornton, William Pugin, Surgeon to the Hospital for Diseases of the Throat; Surgeon to the Marylebone Dispensary: 42 Devonshire Street, Portland Place, W.
1876	Thrupp, James Godfrey: 10 Park Street, Grosvenor Square, W.
1874	Travers, William: 2 Phillimore Gardens, Kensington, W.
1868	Venning, Edgcombe (C.), Assistant Surgeon, 1st Life Guards: 87 Sloane Street, S.W.
1869	Vernon, Bowater J., Ophthalmic Surgeon to St. Bartholomew's Hospital: 43 Weymouth St., Portland Place, W.
1868	Wagstaffe, William Warwick, Assistant Surgeon to St. Thomas's Hospital: 2 Palace Road, Albert Embankment, Westminster Bridge, S.E.
1869	Walker, Joseph, Dental Surgeon to the Westminster Hospital: 22 Grosvenor Street, W.
1875	Walsham, William J.: 27 Weymouth Street, Portland Place, W.
1870	Warwick, Richard Archer, M.D., Surgeon to the Richmond Infirmary: 5 Hill Rise, Richmond, S.W.
1868	Watkins, Edwin T., M.D.: 61 Guilford Street, W.C.
Orig Memb	Watson, William Spencer, M.B., Surgeon to the Royal South London and to the Central London Ophthalmic Hospitals: 7 Henrietta Street, Cavendish Square, W.
Orig Memb	Weber, Hermann, M.D., Physician to the German Hospital: 10 Grosvenor Street, W. (C. 1867–71, V.P. 1873–5.)

ELECTED

1869 WELLS, J. SOELBERG, M.D. (C.), Professor of Ophthalmology at King's College; Ophthalmic Surgeon to King's College Hospital; and Surgeon to the Royal London Ophthalmic Hospital, Moorfields: 16 Savile Row, W. (C. 1875–6.)

1868 WELLS, THOMAS SPENCER, Surgeon in Ordinary to H.M.'s Household; Surgeon to the Samaritan Free Hospital: 3 Upper Grosvenor Street, W. (C. 1873.)

1874 WHEELHOUSE, CLAUDIUS GALEN, Senior Surgeon to the Leeds General Infirmary, and Lecturer on Surgery, Leeds Medical School: Hilary Place, Leeds.

1868 WHIPHAM, THOMAS TILLYER, M.B., Assistant Physician to, and Curator of Museum at, St. George's Hospital: 37 Green Street, Grosvenor Square, W.

1874 WHISTLER, W.M., M.D.: 80A Brook Street, W.

1871 WIGHT, GEORGE, M.B., C.M.: 428 Liverpool Road, N.

Orig Memb WILKS, SAMUEL, M.D., F.R.S., Physician to, and Lecturer on Medicine at, Guy's Hospital: 77 Grosvenor Street, W. (C. 1871–2.)

Orig Memb WILLETT, ALFRED, Assistant Surgeon to St. Bartholomew's Hospital: 36 Wimpole Street, W. (C. 1872–5.)

Orig Memb WILLIAMS, CHARLES THEODORE, M.D., Physician to the Hospital for Consumption and Diseases of the Chest: 47 Upper Brook Street, Grosvenor Square, W.

1870 WILLIAMS, WILLIAM RHYS, M.D., Lecturer on Mental Diseases at St. Thomas's Hospital: Bethlehem Royal Hospital, Lambeth Road, S.E.

Orig Memb WILLIS, FRANCIS, M.D.: Braceborough, Stamford.

1868 WILTSHIRE, ALFRED, M.D., Joint Lecturer on Obstetrics, and Assistant Physician-Accoucheur, St. Mary's Hospital: 57 Wimpole Street, W.

1869 WOLFF, ABRAHAM, Surgeon to the Jews' Deaf and Dumb Home: 48 Gloucester Gardens, Hyde Park, W.

1872 YEO, J. BURNEY, M.D., Physician to King's College Hospital, Assistant Physician to the Brompton Hospital for Consumption: 44 Hertford Street, May Fair, W.

CLINICAL SOCIETY OF LONDON.—BALANCE SHEET, 1874–5.

1874		£	s.	d.	1875		£	s.	d.
	To Balance from last account. . . .	109	2	8		By purchase of £50 3 per cent consols .	47	3	9
	„ Subscriptions for 1874–5 . . .	204	15	0		„ Cost of printing, binding, &c., of Vol. VIII. of 'Transactions' . . .	110	13	0
	„ Admission Fees from 7 new Resident Members	14	14	0		„ Royal Medical and Chirurgical Society for use of rooms, &c. . . .	47	5	0
	„ Admission Fees from 2 new Non-resident Members	4	4	0		„ Refreshments and attendance at meetings	31	10	0
	„ January Dividends on £300 Consols .	4	9	3		„ Printing, stationery, postages, &c. .	10	11	5
	„ July do. on £350 Consols .	5	4	2		„ Collection of subscriptions . . .	8	5	0
	„ Sale of 'Transactions'	18	5	8		„ Messrs. Longman's commission on sale of 'Transactions'	1	16	7
	Amount of stock standing in the names of the Trustees, Jan. 1, 1876, £350 3 per cent. consols.					„ Balance due from Treasurer . . .	103	10	0
		£360	14	9			£360	14	9

E. HEADLAM GREENHOW, M.D., *Treasurer.*

Audited and found correct, December 10, 1875. EDGCOMBE VENNING, J. WARRINGTON HAWARD, *Auditors.*

REGINALD SOUTHEY, THOMAS P. PICK, *Hon. Secs.*

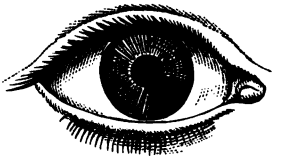
BOSTON MEDICAL LIBRARY ASSOCIATION.

COMMUNICATIONS.

I.—*On a Method of performing Iridectomy for the Improvement of Sight.* By ROBERT. BRUDENELL CARTER. *Read October* 8, 1875.

I HAVE brought here this evening, for exhibition to the members of the Society, some patients upon whom I have performed iridectomy, for the improvement of sight, in a manner which nothing but the well-known dictum of Solomon hinders me from describing as 'new'; and which those who see it will, I hope, admit to be 'improved.' There are many cases, chiefly those of opacity of the central portion of the crystalline lens, or of the central portion of the cornea, in which it is customary to remove a piece of iris in order to form a lateral pupil, opposite to transparent portions of the affected media; and the way in which the operation for this purpose has been performed has often left much to be desired.

Woodcut 1.



Woodcut 2.

A large iridectomy, such as would be required for the relief of tension, leaves in the iris a gap resembling that which is shown in woodcut 1; and this becomes a source of imperfect vision in two ways, first by the superabundance of light which it admits to the retina, secondly by uncovering the margin of the lens, and thus producing distortion of the retinal image by spherical aberration. Even when the piece of iris excised is extremely small and narrow, the solution of continuity of the circular fibres will generally allow the opening to enlarge or spread in a way which would hardly be anticipated; and a better result than that shown in woodcut 2 can scarcely ever

be obtained. It is theoretically possible to cut a mere notch out of the pupillary margin, and to replace the rest of the iris; but the attempt to do so seldom succeeds in practice, unless the preliminary incision through the ocular tunics is made in the cornea. This is scarcely ever desirable, because there is often only a narrow zone of transparent cornea available for visual purposes, and the cicatrix of an incision is always liable to be surrounded by a more or less turbid margin. Generally speaking, the incision should be made outside the cornea, and then, whether the iris is drawn out by hook or by forceps, and however close to the traction instrument it may be cut, it will usually be found that the resulting notch extends fully to the peripheral margin.

An artificial pupil of the shape shown in woodcut 3 is that which affords the best vision in cases of central opacity; and a good deal of attention has been given, of late years, to the methods by which such a pupil may be obtained. At the International Ophthalmic Congress, in 1872, Mr. Bowman described a plan which he had adopted for the purpose. He made a puncture through the cornea on the side opposite to the intended pupil, and then introduced into the anterior chamber, through this puncture, a very fine narrow knife, with a smooth rounded extremity and one cutting edge, like a tiny spatula sharpened along one side. This knife was pushed under the iris, between it and the lens, with a flat surface towards each, for a certain distance; and then its sharp edge was turned towards the iris, and was made to divide that structure by a drawing cut against the cornea. In Mr. Bowman's own hands such a proceeding would be free from risk; but a less expert operator might easily lacerate the capsule of the lens and produce traumatic cataract, or might even dislocate the lens from its attachments. The pressure necessary to divide the iris was liable to make a little cut into the posterior surface of the cornea itself; but Mr. Bowman did not find that this trifling injury was productive of any hurtful consequences, and the retraction of the divided sphincter caused the linear incision in the iris to gape in such a manner as to form a satisfactory pupil. M. de Wecker, of Paris, who recognised the importance of the object to be attained, but who feared the effects of the cut made by the

Woodcut 3.

knife against the cornea, endeavoured to improve Mr. Bowman's operation by one which he called 'iridotomy.' He contrived a pair of scissors, with forceps handles, and with blades each of which was much like that of Bowman's knife. He introduced these scissors into the anterior chamber, with their blades closed, through a puncture in the same position as that made for Mr. Bowman's operation. When the blades reached the further pupillary margin they were suffered to expand a little, and were then pushed on, one between the lens and iris, the other between the iris and cornea, until, by simple closure, they made a linear incision in the iris, which, when the aqueous humour was re-secreted, gaped sufficiently to form the required pupil. The risks of injury to the lens, by this method, are still greater than by Mr. Bowman's; and both operations would be extremely difficult of performance in a class of cases in which they are especially required, and in which a central opacity of the cornea conceals the margin of the pupil from view, and renders it necessary to guide the cutting instrument under the iris almost by conjecture.

In considering the subject, it occurred to me that it would be possible to use De Wecker's scissors in such a way as to bring about the desired result in a very simple manner. In the performance of ordinary iridectomy, as soon as the iris forceps are suffered to expand within the anterior chamber, we see the iris rise up between the blades, lifted by the aqueous humour behind it, or by the coming forward of the lens and vitreous as the aqueous humour escapes. It seemed probable that the same thing would happen with scissors; and on trial I found my expectations fulfilled. The plan I now adopt is to make a very small incision in the sclero-corneal junction, as far back as possible, and on the same side as the intended iridectomy. The cutting needle or narrow knife employed is withdrawn with little or no loss of aqueous humour; and the closed scissors are immediately introduced, filling the wound, and are carried on until the extremities of their blades are advanced nearly to the nearer pupillary margin. They are then suffered to expand a little—a morsel of iris instantly rises between their edges, and is cut off as they are closed. The very small linear strip which is thus excised rests on the upper surface of the closed blades, and is easily brought out with them, aided by the final escape of aqueous humour which attends their withdrawal.

The absolute loss of iris is so small that I have sometimes had to use a magnifying-glass, at the time of operation, in order to make sure that I had not failed of attaining my object, but the wound gapes rather widely as soon as the aqueous humour is re-secreted. I have now operated in this manner on thirty eyes, in sixteen patients, namely two single operations and fourteen double ones, with only one mischance—which was the production of traumatic cataract in the second eye operated upon. The cataract was removed by suction, and the patient, who came to the hospital with only perception of light, has now excellent vision. In order to avoid wounding the lens, I have since kept back the heel of the scissor-blades as much as possible towards the iris, at the same time directing the points forwards towards the centre of the cornea; and this manœuvre has the additional advantage of diminishing the breadth of the plait which is excised. In one or two of my early cases the iris was disposed to prolapse, and I made some experiments with calabar-bean, with the idea that I might thus render the membrane more rigid. The results disappointed me, for the intermediate portion of the iris rose between the scissors, and the pupillary margin escaped—so that I cut out a little triangular piece, which, at each angle of its base, remained attached to the pupillary margin. This happened two or three times, and in each instance I twitched away the piece with forceps by a subsequent operation. I have now abandoned calabar, and fancy that I have learnt so to manage the scissors as to obtain some control over the size of the piece which is cut out.

In the early operations the excised piece was sometimes left behind by the scissors, and was then at once extracted by iris forceps from which the teeth had been filed away, so that they could not wound the lens. Latterly I have had no occasion for forceps, the removal of the piece together with the scissors being a matter of very simple manipulation.

The patients shown to-night were all operated upon in the experimental stage of my proceedings; and I could have wished to postpone this paper, in order to secure the attendance of some later, and, I think, more favourable examples, who have returned to their homes in the country. But I have here an accurate portrait of one of these cases (plate i. page 1); and the patients who are present will suffice to illustrate the operation. I regret that there is only one patient with blue irides, the iridectomy being comparatively inconspicuous

Plate 1.

F.D Drewitt del R.Mintern lith. Mintern Bros. imp.

M^r Carter's method of performing Iridectomy.

See Page 4.

against the dark irides of the rest. The boy, who has blue irides, had his right eye operated upon under calabar-bean, and in this eye I had afterwards to twitch away the partially detached piece, leaving a gap of larger size than I had wished to make.

The operation, as compared with other methods of making an artificial pupil, seems to me to have the important merit of simplicity. After the puncture is made, a single instrument is introduced once into the anterior chamber, is opened, closed, and withdrawn, and that is all. The iris remains *in situ*, is neither seized, twisted, nor dragged out of the eye, and has no opportunity of contracting any adhesions with the external incision. After a small amount of practice, it is not difficult to regulate both the breadth of the piece removed and its extent towards the periphery, and thus to obtain an artificial pupil of the best shape, of determinate size, and in any position which may be desired, with a minimum of injury or disturbance to other parts of the organ. It need hardly be said that for the relief of tension the operation would be almost, if not altogether, valueless.

II.—*Case of Idiopathic Tetanus.* By R. SOUTHEY, M.D. *Read October* 8, 1785.

C. L., æt. 20, a fair-complexioned well-nourished young man, was admitted into St. Bartholomew's Hospital, under my care, on June 25, 1875. He had been laid up for twelve days, suffering all the ordinary symptoms of tetanus, for which he had been treated by Dr. Hall, of Tottenham, with chloral in moderately large doses. He was a ticket collector on the Great Northern Railway—a hard-working, robust, temperate man, who had never had a day's previous sickness.

History of Illness.—On June 14 he had been exposed to wet, and had remained in his wet clothes all day. On the 16th he first complained of severe pain over his loins, which prevented his standing upright. Shortly afterwards he noticed that his neck was stiff, and, a little later, that he could not open his mouth to take food. On June 17 he experienced the first distinct paroxysm of opisthotonos, but these were repeated two or three times a day up to the date of his admission; and by his own account, confirmed by what I afterwards learnt, the attacks were becoming both more frequent and more serious.

Condition on admission, June 28, 10 P.M.—He was quite sensible, lying flat on his back; able to move his arms, but quite unable to move his legs or turn himself in bed; his teeth were somewhat tightly clenched, the muscles of his jaw and neck were quite rigid, and those of the calves of his legs felt hard; the abdominal muscles were flaccid, and there was some slight risus sardonicus. He could neither open his mouth or protrude his tongue.

Skin perspiring profusely. Temp. 100°; pulse 120, sharp and jerking; resp. 40 per minute.

He complained of aching pain throughout the back, from nape of neck to sacrum, and of similar pain in the calves of both legs.

The rigid muscles were everywhere tender to pressure, and, pressing over the spines of his vertebræ, when making my examination of him, I provoked a very severe opisthotonic spasm, in which he lay with his back bowed, and begged to be moved on to his left side.

This attack lasted nearly five minutes; in it his breathing was gasping and irregular.

Between the attacks he was able to move his arms but not his legs, and lay in a position of constrained stiffness.

The bowels had not acted for some days, the urine was scanty and high coloured. Fluid food only had been taken, and this was swallowed with some difficulty. He had had brandy as well as chloral, but what quantity I could not make out, and his neck had been blistered.

Treatment.—5 grains of calomel; 1 gr. opium, directly; pot. bromide ʒj; succi conii ℥ss; aquæ ℥j; every three hours.

(By some mistake only ʒij of the conium were given.)

All stimulants were to be discontinued, and nothing but iced milk was given him in small quantities, alternately with good beef tea, at frequent short intervals. A screen was put round the bed, and he was kept as quiet as possible.

June 29.—Patient has an attack of opisthotonos nearly every hour, the slighter seizures lasting about two minutes, and the graver ones about five minutes. He perspires profusely in them, and sleeps or dozes, lying with his eyes closed in the intervals.

He usually screamed out at the commencement of each spasm. Bowels not open.

Urine 10 ounces; acid, dark orange colour; sp. gr. 1040. It contained an abundant precipitate of earthy phosphates,

which were thrown down on addition of ammonia, or by heat alone. Morning: temp. 99·2°; pulse 94; resp. 26. Evening: temp. 99·2°; pulse 72; resp. 36.

Skin of body generally seemed hyperæsthetic, the slightest touch on any part, or the exposure of the trunk to the air being sufficient to excite violent tetanic spasm.

June 30.—Passed a very *bad* night, the distinct opisthotonos spasms were less frequent, but the remissions were less complete. He lay constantly groaning with pain between 2 A.M. and 8 A.M., and took his nourishment with difficulty; more urine was passed, but the bowels had not acted, and his abdomen had become full and tympanitic. At 11.30 he had a most severe seizure in which the body became completely rigid, the trunk muscles remaining so for some time, and he complained bitterly of the cramp in his calves. At 2 P.M. his tongue was severely bitten upon its right side during an attack.

Ordered gr. xxx of compound jalap powder, to be repeated every three hours until the bowels acted, and patient to be put into a tepid bath, temp. 98°, and kept in it as long as he felt comfortable. Evening temp. 99°; pulse 116; resp. 36.

July 1.—Passed a sleepless night, took three doses of the jalap before the bowels acted, but was afterwards certainly better; he had only one severe spasm in course of the day. The muscles of the jaw too were not held so rigidly, and he was able to take his food more easily. Temp. 98·4°; pulse 114; resp. 30.

July 2.—Still had some bad attacks, but the frequency of them was less, and he obtained much sleep in the intervals. Bowels acted four times copiously. Temp. 98·4°; pulse 120; resp. 30.

July 3.—Only three attacks of tetanic spasm, which appeared to invade the muscles of the legs only from the knees downwards. Bowels open; tongue cleaning; urine, 1½ pint; sp. gr. 1032.

From this date the patient steadily improved, although he experienced a slight spasm on July 5, gaining strength every day, and only complaining of the aching in his calves and in the muscles of his back.

Remarks.—In the above related case of idiopathic tetanus the opisthotonos was as severe as I have ever witnessed it in the traumatic form of the disease. I may state that the body of this patient was carefully searched for a wound or splinter, but nothing of the kind was found.

The following clinical facts impressed themselves upon me: that just as the invasion of the disease was gradual, although quickly attaining to a maximum of intensity, so too the declension was gradual, the attacks becoming first less frequent and then less severe. The muscles of the neck and jaw, too, which had been those first invaded, gave earliest evidence of an abating rigidity. As he improved he was able to protrude the tip of his tongue. Then the improvement coincided with the evacuation of the patient's bowels, which had been stubbornly constipated throughout his illness. It is true that purgative medicine was administered before the bowels acted, but we may well ask ourselves in what degree this purge promoted the favourable change.

He had taken a dose of calomel on the day of his admission, which might have been expected to excite purgation, although no such result ensued.

Purgations have been very highly commended and largely employed in the treatment of tetanus; and this probably from observation of a fact, and from a conclusion thereon, perhaps too hastily arrived at. The fact, I mean, that in tetanus quite invariably the normal peristaltic action of the intestines is arrested so long as the spasms are severe and continuous, and that, coincidently with any well established remission of the spasms in the voluntary muscles, the involuntary muscles of the intestines recover their co-ordinated action.

But I venture to dissent from the deduction that this should be held to authorise or indicate the administration of purgative drugs.

Nay, I think we might expect that they would rather do harm than good, just as we find that any peripheral excitation of the cutaneous nerves prompt speedy and violent discharges of nerve force from the spinal centres.

Still it is difficult to abstain from giving any purgative when the bowels have been confined for several days, and the abdomen becomes tumid; and I must plead guilty to having given the compound jalap powder much against my will at the eleventh hour, when perhaps nature would have opened the bowels without its aid.

It remains for me to summarise what I have to say in reference to the treatment adopted.

Chloral and stimulants had been employed up to the thirteenth day of the disease, without any apparent amelioration of the symptoms. Bromide of potassium, although not given by me in the large doses which have been suggested

by some American practitioners, was taken by the patient from the thirteenth day of his tetanus in drachm doses every three hours, in combination with the succus conii, which was probably in too small a dose to produce any physiological action.

On the fourth day of this treatment some improvement was manifested, and after the seventh day no further spasms were observed.

The tepid bath was also employed daily, sometimes for nearly an hour at a time, and always exercised a marked tranquillising effect.

I am not prepared to conclude that the bromide of potassium effected the cure in this case, and am well aware that a remedy employed for the first time only on the thirteenth day of tetanus is likely to have an undue meed of praise accorded to it, since, as has been long since observed, the cases of tetanus which survive the thirteenth day show a large proportion of recoveries.

At the same time I feel bound to record the fact that this case recovered after the treatment adopted—a treatment especially indicated by physiological experimentation on animals, and which has been largely employed and advocated in tetanus. Indeed I find in Dr. Wood's work on Materia Medica and Therapeutics, p. 280, the account of sixteen cases of tetanus treated with large doses of bromide; nine of traumatic, all of which recovered; seven of idiopathic, with five recoveries.

III.—*Experiences with Salicylic Acid.* By George W. Callender, F.R.S. *Read October* 8, 1875.

During the past twelve months we have used salicylic acid as an application in many cases to wounds. As the remedy is a comparatively new one, it may be of interest to mention the results of our experience in the wards under my care:—

I will first describe the several ways in which the acid has been prepared for use; then briefly refer to a few of the cases in which it has been employed; and thirdly give an opinion as to its use in surgical practice.

1. The following preparations of salicylic acid have been used at one time or another:—

a. Phosphate of soda, 3 parts; salicylic acid, 1 part; water, 50 parts.
b. Salicylic acid, 1 part; olive-oil, 49 parts.
c. Salicylic acid, 1 part; bicarbonate of soda, ½ part; water, 100 parts.
d. Salicylic acid, 10 parts; borax, 8 parts; water, 100 parts.
e. Salicylic acid, 1 part; prepared lard, 20 parts.

The acid has also been used with mastich and with spirit of wine; but these preparations had to be discontinued by reason of the irritation caused, as we thought, by the ingredients combined with the acid. The solutions marked *a*, *b*, and *c*, and the mixture of acid with lard, were the forms most frequently employed.

2. For the notes of the following cases I am indebted to my House Surgeon, Mr. Haimes:—

I.—A. J., æt. 7, suffered from disease about the hip-joint, for which a free incision was made through the soft parts, and some dead bone removed from the trochanter and head of the right femur. The wound was washed out with salicylic acid, dissolved with spirit in water, and was subsequently dressed with a similar lotion for ten days. On the eleventh day the salicylic ointment was employed (*e*), the dressing being made with Japanese paper. These dressings brought out a vesicular eruption, the vesicles containing a clear fluid, the intervening skin being much inflamed, the affection corresponding with the area covered by the dressing. Pulse, 130; temp. 102°; resp. 32.

The irritation soon subsided after the substitution of simple dressing for the salicylic acid.

II.—S. S., æt. 20, had caries of the metatarsal bone of the left great toe. The wound was washed out with a strong solution (with spirit) of salicylic acid, and was subsequently dressed with solution *a*. Considerable local irritation resulted, which was relieved by the withdrawal of the acid.

III.—J. B., æt. 11, was operated on for caries of the right tibia. The wound was washed out with a strong solution of salicylic acid, and was afterwards dressed with solution *a*. Healed slowly but favourably, until the preparation of acid and lard was employed, when he suffered from a vesicular rash, similar to that observed in case I., and which subsided with warm-water dressing as an application to the wound.

IV.—H. C., æt. 9. Another case of chronic disease of

the hip-joint, for which the soft parts were freely incised, to expose the bone affected. The wound was washed out as before immediately after the operation, and was dressed with the salicylic acid ointment, which six days later had to be discontinued, in consequence of the rash with constitutional disturbance. Pulse, 120; temp. 101·2°; resp. 24. Carbolized oil was subsequently used as a local application.

V.—E. Y., æt. 10. Excision of the elbow-joint for strumous disease. The wound was washed out with salicylic acid, and was dressed with solution *a* on Japanese paper. There was considerable discharge from the wound, and the granulations were pale and flabby. The dressing was after a time changed to carbolic acid, when the granulations became florid, and the discharge was reduced to a minimum.

VI.—R. S., æt. 14, sustained a severe laceration of the fore-arm. The wound was at first cleansed with carbolic acid. The granulating surface was afterwards dressed, first with solution *a*, and later on with solution *d*. The latter was the better, and under its influence the wound healed rapidly.

VII.—E. B., æt. 22, underwent an operation for the relief of a neuralgic affection. The wound was washed out and treated with salicylic acid, solution *a*, and healed very well by granulations without suppuration.

A greater number of cases might he here related, but upon those referred to and influenced by other observations I come to the following conclusions.

3. Putting together its good points, we find that salicylic acid is free from odour, and so far is acceptable to the patients; that wounds heal under its influence, and during the progress of their repair are free from bad smells; that unless strong with spirit, or but little diluted, it does not cause local pain. Its bad points seem to be these: that above the strength of about 2 per cent. it causes local irritation with some constitutional disturbance, and if the patient has a delicate skin even a weak preparation is a source of trouble; that there is more discharge from a wound dressed with salicylic than there is when carbolic acid is used; that its influence upon a recent wound, as after an operation, is not so efficacious against the occurrence of decomposition as is that of carbolic acid, chloride of zinc, or boracic acid; that the repair of a wound is less active, and the granulations, if any, are more flabby than when other simple or antiseptic dressings are employed.

On the whole, whilst admitting its use as a local application to be fairly commendable, I think it inferior in its antiseptic properties to other agents, and I do not consider it to be a remedy meriting the strong recommendations which have been given by some of those who have made trial of it.

IV.—*Case of Extensive Wound of Knee-joint, treated by Lister's Method; Recovery with Bony Ankylosis.* By Thomas P. Pick. *Read October* 8, 1875.

GEORGE S., æt. 18, a sawyer by trade, was admitted into St. George's Hospital with a severe wound of the knee-joint, on Feb. 20, 1872.

He stated that he was working a small circular saw by means of a treadle, when his knee came in contact with the saw, causing a severe wound. He was reported to be temperate in his habits.

When admitted there was found to be a longitudinal wound in front of the left knee-joint, some four inches in length, and with jagged and lacerated edges. The wound had completely divided the patella and extended some distance into the left condyle of the femur, producing a groove, about an inch in depth, in this bone. There were several fragments of bone and cartilage lying loose in the wound. The two halves of the patella were widely separated from each other, and the interior of the joint freely exposed. There was not much hæmorrhage, no vessel requiring ligature. The patient was apparently a healthy man, and it was therefore determined to make an attempt to save the limb. Every part of the wound and the interior of the joint was first carefully sponged with a solution of carbolic acid, all the loose fragments of bone and cartilage were removed, and the edges of the wound brought together with catgut suture. Just before the last stitch was tied, the interior of the joint was injected with a solution of carbolic acid (1 in 40), the lotion being allowed to remain in the interior of the joint. The wound was then covered with oil-silk saturated with carbolic acid and several layers of carbolised shellac plaster. The limb was placed in a MacIntyre's splint and swung in a Salter's swing cradle.

He was ordered to be injected with half a grain of morphia and to have ordinary diet, beef-tea, and a pint of

porter. On the evening of the same day his skin was hot, he was restless, and his temperature was 100·2° F.

Feb. 21.—On the following day there was considerable febrile excitement, and he complained of great pain. There was some swelling of the knee. Pulse 110; temp. 102° F.

Feb. 22.—There was less swelling and less pain. The dressing was changed, a constant stream of carbolic acid solution being kept up over the wound, while it was exposed, in order to prevent the admission of any air. The wound looking perfectly quiet; the edges in apposition, no redness or swelling around. There was a little healthy discharge, which was quite free from smell. Pulse 120; temp. 101·8° F.

Feb. 23.—There was less effusion in the joint and no pain. He was still a little feverish, and his bowels had not acted since the accident. Tongue white. Pulse 120; temp. 101.6° F.

He was ordered a dose of castor-oil, and to have beef-tea and milk, instead of ordinary diet.

Feb. 26.—On the 26th, three days after, the fever had all left him, and he was quite cool and comfortable. The effusion in the joint had in a great measure subsided, the wound looking healthy and was discharging freely, but the pus was quite natural and free from any smell. He complained of no pain. He was ordered a draught containing bark and ammonia, six ounces of port wine daily, and to return to his ordinary diet.

March 5.—(One week after.) Since the last note he has continued to progress favourably. The wound has discharged freely, the discharge being quite healthy and inoffensive. There is no febrile excitement, and the man eats and sleeps well. A large collection of matter has formed on the outer side of the thigh, some distance above the joint.

March 7.—Two days later the abscess was opened and a quantity of thick laudable pus discharged.

March 11.—The man is beginning to suffer somewhat from the effects of the discharge; he is weaker. His pulse 120; temp. varying from 100° to 101° F. His tongue is clean; he eats and sleeps well. The discharge, though abundant, is perfectly natural and sweet. To have ten ounces of port wine daily.

March 30.—Since the last notes the discharge has gradually lessened in quantity, and though somewhat emaciated, he seems perfectly comfortable. His appetite is good, he sleeps well, and suffers no pain.

May 6.—The discharge has diminished very much, and

the wound is granulating. There is a considerable amount of consolidation about the joint, and union appears to be taking place.

June 10.—The bones are fairly ankylosed, and the wound is now quite superficial.

July 6.—He was discharged.

May, 1875.—He was seen three years after the accident. He was strong and hearty, and states that he enjoys very good health. There is firm bony ankylosis of the joint, and he is quite strong on the limb and able to work and earn his living as a stoker in a gas factory.

Remarks.—In most of our text-books on Surgery, as has been remarked by Mr. Poland, in a paper in the fifty-third volume of the 'Medico-Chirurgical Transactions,' the subject of compound fracture of the patella has received but scanty attention, the subject being dismissed with the remark that such cases require immediate amputation. The very admirable and exhaustive paper of this gentleman puts the matter in a new light, and appears amply to justify the conclusion at which he arrives. First, 'That compound fractures of the patella are not necessarily mortal injuries, and do not require immediate amputation or resection, except where complicated with other injuries of the joint structures;' and secondly, 'In all cases we should attempt to save the limb, and adopt the ordinary treatment as for simple fracture of the patella, whether comminuted or otherwise.'

Bearing these conclusions in mind, and encouraged by the good results which had been obtained in the cases collected and tabulated by Mr. Poland, I determined, in my patient, to make the attempt to save the limb, with what good result may be seen from an examination of the patient at the present time; for no one can fail to admit that the man is in a far better position now with his own limb, though his knee joint is ankylosed, than he would have been with a wooden leg, although perhaps his recovery was more retarded than if amputation had been performed. Again, if we may deduce any argument from the statistics derived from the cases collected by Mr. Poland, the patient's life was less endangered by leaving the limb on than by amputation. This gentleman has collected eighty-five cases of compound fracture of the patella, either of that bone alone or complicated with some fracture of the other bones entering into the formation of the joint,

* 'Medico-Chirurgical Transactions,' vol. liii. p. 49.

and out of these there were twenty-one deaths—an average of one in four—a result which will I think compare favourably with amputation of the lower third of the thigh. Take, for example, the statistics of St. George's Hospital, as collected by Mr. Holmes* in the first volume of the 'St. George's Hospital Reports.' Out of three hundred cases, there were twenty-one of amputation of the thigh for accident, and of these twelve proved fatal, or more than one half. So that the chances of life appear to be as two to one, if the limb be allowed to remain, over amputation.

My principal object, however, in bringing this case under the notice of the Clinical Society is to excite some discussion, and to elicit the opinion of those members present on the subject of the so-called 'Lister's antiseptic dressing.' This mode of treating wounds has now been in vogue for some years, and doubtless every surgeon here present has given it his careful consideration, and it would be interesting to learn the conclusions at which they have arrived. For my own part, I must confess to the most implicit confidence in its advantages, when properly and carefully applied, and I am inclined to believe that the reason some have not found any sufficient good from it is because they have not been particular in their manner of using it.

There seems to be among some a very mistaken and erroneous notion, that by treating wounds in this way, antiseptically, that we arrest suppuration and promote union by first intention, and that wounds under this plan of treatment heal more rapidly, and thus with greater safety to the patient. This is not so. What is claimed for the antiseptic dressing is, that it promotes *healthy* suppuration, if we may use the term; that it, in fact, prevents the decomposition of the pus; and if it does this, then we shall materially diminish the chances of pyæmia and other allied diseases.

V.—*Case of Congenital Tumour from Arrested Development of some of the Bones of the Skull.* By Jonathan Hutchinson. *Read October* 22, 1875.

MINNIE JENNINGS was first brought to me at the Moorfields Ophthalmic Hospital in Oct. 1871. She was then six months old. Her mother brought her because the eyeballs were too prominent, and the head malformed.

* 'St. George's Hospital Reports,' vol. i. p. 303.

She was the younger of two children, the elder being reported to be healthy and free from any malformation. Her parents were not related before marriage; the mother is of Dutch parentage, the father a Somersetshire man.

The following notes were, in substance, taken at the time (Oct. 16, 1871). There is a large nearly hemispherical tumour in the middle line of the top of the skull and frontal region. It was noticed at birth, and is considered not to have increased since then, but to have become rather less conspicuous. The eyeballs are very prominent, and the lower parts of the sclerotics are much exposed. The tumour is smooth and hard; its base is 4–5 inches wide in all parts, and in the middle line reaches just to the root of the nose, while on each side it comes almost down to the eyebrows. Laterally the base of the tumour reaches nearly as far outwards as the outer angles of the orbits. The fontanelles are not quite closed, but are small for the baby's age. A hard ridge occupies the situation of the sagittal suture in its anterior half. Behind the tumour, and almost continuous with its base, are one or two nodules. If the child's face is looked at in profile the tumour is seen to spring, in the middle line, straight from the root of the nose, and to form with the bridge of the nose a slightly obtuse, or nearly right, angle. The nose is tolerably well-formed, but there seems to be some obstruction to her breathing. She 'takes notice' well, and can hear. The pupils are active.

I now lost sight of the child for three and a half years, when at my request her mother brought her again for me to see, and I made the following notes on April 12, 1875.

She is now four years old, but would not be taken for more than two. She has but just learned to walk. She is a cheerful good-tempered child, and can talk well. She is very florid. Her limbs are small, but there is no evidence of rickets. The right hand is always colder than the other, and the whole upper extremity is believed to be weaker than the left. The dentition is perfect. The lower part of her face is of natural size, but her nose and upper lip are perhaps too small. The width of her temples, measured across the eyes, is probably natural, but just above the outer angles of the eyebrows the skull narrows, leaving on each side prominent ridges which mark the junction between the squamous and parietal bones. Thus it would appear that the whole frontal bone is too small. The eyeballs are very prominent, almost the whole cornea being exposed, and much

of the sclerotic below it; during the examination one of the eyes got dislocated forwards, and had to be replaced. The upper margins of the orbits are ill-developed and placed far back, and the proptosis is probably accounted for by shallowness of the orbits.

In the middle of the top of the skull, beginning a little behind the coronal suture and passing backwards along the whole length of the sagittal, is a soft swelling an inch and a half high and probably about two inches across. A sort of ill-marked depression crosses the tumour about its middle, and near to this depression two plates of bone can be felt in its walls. At its margins lips of bone pass upwards into its walls, where they gradually thin off and are lost—a condition which suggests that the tumour has pushed its way from within outwards. The tumour is soft, and might be supposed to fluctuate. It receives impulse both from the circulation and from the respiratory movements when strong; the pulsation, however, is very feeble, and might easily be overlooked. The swelling is covered with well-grown hair, and does not seem to be in the least tender. The back part of the child's head appears to be of almost natural form, excepting that the occipital tuberosity is unusually low down, of large size, and to the right rather than in the middle line. There seems no reason to suppose that the total capacity of the child's cranium is increased beyond the natural standard, or that there is anything of the nature of either hydrocephalus or encephalocele. It seems more probable that, owing to the want of development of the frontal bone and anterior parts of the parietal bones, the brain in its growth has caused absorption of bone and bulging in the position of the sagittal suture. The position of the soft tumour now is precisely that of the hard bony ridge present when the child was six months old. The temporal bones and the ears appear to be well formed. All the special senses seem to be perfect. The right eye is turned outwards, but none of the ocular muscles seem to be really paralyzed; she does not, however, appear to have good power of converging either eye.

VI.—*Case of Ulcer of the Tongue, with Gland Disease.*

By Jonathan Hutchinson. *Read October* 29, 1875.

I FIRST saw this patient on April 14, 1874. He was 59 years of age, and in good health. He had known of the ulcer on his tongue for about two months, and had shown it

to Mr. Corner in February. There was no real history of syphilis, and he attributed the sore to his having scratched his tongue with the end of a pipe. The biniodide of mercury and other specifics had been used freely, but without the slightest benefit. My notes state that the ulcer was quite clean, and had a hard border. It was about the size of a sixpence, and placed exactly in the middle of the surface of the tongue. Although there was no tendency to warty growth, and the sore remained quite clean, and there had been no pain, I expressed to Mr. Corner great suspicion that it might prove to be the first stage of cancer, and advised that it should be fully cauterised with the acid nitrate of mercury. Internal treatment by means of the iodide of potassium was also continued.

After the period to which the above description refers, I did not see Mr. W. again for eighteen months, when Mr. Corner again sent him to me, and when he presented the conditions shown at the time he was brought before the Society. He had then an oval patch in the middle of his tongue about as large as the stone of a damson plum, a little raised in the middle and with ill-defined borders. It was just a little firm, but not hard. There was no ulceration, but at its posterior part was a little hollow overhung by smooth papillary growths. These growths were not warty, but looked much like hypertrophied fungiform papillæ. This patch gave him not the slighest pain or inconvenience; indeed he would have considered himself well were it not for the disease of the glands which had come on. I learnt from Mr. Corner that under the treatment mentioned the sore had soon healed, with, however, a little induration at its base; and that it had remained in this state until June 1875, when another sore, similar to the first, formed just behind it. At this time a gland under the middle of the body of the jaw enlarged. This gland softened and broke, discharging a thin serous pus. Towards the end of September another gland further back, just behind the angle of the jaw, enlarged. The diseased action in these glands, as in the sore in the tongue, has been extremely slow and quiet. He has had no pain whatever in them. There is no history of cancer in the family.

VII.—*On a Case of Popliteal Aneurism, in which the Femoral Artery was tied with a Catgut Ligature.*

By T. HOLMES. *Read November* 12, 1875.

THE method of dressing wounds denominated 'antiseptic' was discussed at a recent meeting of the Society, and the opinions of the surgeons present seemed to be so far unanimous as admitting the great importance of cleanliness, of drainage, of attention to all the minuter details of the dressing, and particularly of avoiding the contact of foreign bodies, more especially such as may generate or propagate putrefaction. Now there can be no question that ligatures are foreign bodies which, when they protrude through the lips of a wound, must generate suppuration and retard the closure of the wound. Many authors also believe that the silk ligature imbibes the exudations, and thus generates or propagates putrefaction; though, as it seems to me, the opinions expressed on this head by the advocates of acupressure, especially Sir J. Simpson, were, to say the least, highly exaggerated. The avoidance of such foreign bodies was the object of the invention of acupressure, and of the revival of torsion. The catgut ligature is another method of compassing the same end; for though the ligature is at first a foreign body, it is intended to melt away in the wound, and be absorbed so as to allow of complete primary union, just as if no foreign body had ever been introduced. I will not go into the question of the merits of this form of ligature when compared with acupressure or torsion as a means of securing the vessels on an exposed surface. This is a subject on which much difference of opinion necessarily prevails. I do not deny that the catgut ligature is not always absorbed; that is to say, that it does sometimes set up the permanent irritation of a foreign substance. But I know that it frequently does melt away, and offers no impediment to primary union. This, however, I do not now wish to discuss in reference to any rival method of securing the vessels on a free surface. I wish to limit myself to-night to the comparison of the silk and the catgut ligature for tying the large arteries in their continuity. Not that I have myself had enough experience in the matter to justify me in expressing any dogmatic opinion; but I hope that the cases which I bring forward may elicit the opinions of those who have had larger opportunities in these

operations, and may at any rate enable the Society to see how far we have progressed in testing this portion of the 'antiseptic' treatment.

It will be observed that I have spoken hitherto merely of the catgut ligature; but the catgut ligature is a different thing from the antiseptic ligature. Arteries were tied with catgut by Sir A. Cooper, Sir P. Crampton, Professor Porta, and others; but the wounds were treated in the ordinary way, and the results were very variable. No attention, again, seems to have been given to the preparation of the catgut.

On the other hand, by those who pay strict attention to all the details of the antiseptic treatment, a measure of success is claimed which, in Mr. Annandale's judgment, justifies the strong opinion expressed in the 'British Medical Journal' for Oct. 30, that 'the combined use of the antiseptic catgut ligature and other antiseptic precautions has removed all the more serious risks in connection with the ligature of arteries.' On the same page of the 'British Medical Journal' will be found an interesting Paper by Mr. Oliver Pemberton, 'On ligature of the common femoral artery, and especially on ligature by an antiseptic material,' in which that surgeon expresses his confidence in the use of the carbolised catgut ligature, even without any antiseptic precautions, and adduces a case in which the common femoral was tied an inch below Poupart's ligament, where no antiseptic precautions were taken, and 'the wound healed in the ordinary way by suppuration and gradual repair.'

My own experience in the matter is limited to the ligature of four large arteries, viz. the subclavian and carotid tied simultaneously—a case which has been published—in which I tried to treat the wounds antiseptically, but the patient's restlessness prevented me from obtaining complete success in the attempt. Nevertheless, though the wounds suppurated superficially, I believe their deep parts closed by first intention; at any rate, nothing was seen of the ligatures. The man died eight weeks afterwards from the results of the galvano puncture of the aneurism. And I produce drawings,* made by my friend Mr. John Morgan, of the condition of the arteries, neither of which had been cut through. They were closed only by a kind of diaphragm of no great extent, which has been left intact in the case of the subclavian, but laid open in the carotid. In the latter artery were two very

* See the figure on p. 89 of my 'Treatise on Surgery, its Principles and Practice.' 1875.

minute pouches filled with blood-clot, and leading into the cellular tissue forming the sheath of the vessel.

The third artery was the femoral, in the case which I will proceed to read—a case of much interest in other ways, and especially with reference to the cause of death. Here the patient died exactly seven days from the operation, and I produce the artery, which my house-surgeon, Mr. Frost, removed from the body. The knot of the ligature is visible, but there is nothing to be seen of the rest of the string. The artery is perfectly continuous, and I think would have probably been found at a later period in the same condition as the subclavian and carotid in the former case, had the patient lived as long. But it will be observed that in this case also there was free suppuration, although the wound was dressed antiseptically. No doubt the patient's violence during his intoxication and afterwards must have tended to produce and increase suppuration. In this case also the ligature was buried in lymph.

The fourth case was one which I hope some day to bring before the Society in reference to the question of distal ligature of the left carotid in aortic aneurism. I performed that operation twenty-two days ago, tying the artery with carbolised catgut; not under the spray, but carefully washing the wound out with carbolic lotion afterwards, and then covered it with a mass of cotton wool and left it untouched for eight days. The result was not very favourable; I mean as far as the ligature on the artery and the healing of the wound were concerned. The effect on the aneurism was very striking. The patient had no symptoms except some pain in swallowing, caused by the wound in the neck; but on removing the dressing I found much pus pent up below the wound; and the latter is not yet closed. There is, however, no irritation about it, and no part of the ligature has come away.

Such has been my experience in this matter. Its results, though far from conclusive in consequence of accidental circumstances, are quite consistent with the opinion which I entertain that the antiseptic ligature is a most efficient agent in combatting the tendency to secondary hæmorrhage, and that it renders possible that union by first intention which was John Hunter's object in his first operation on the femoral artery. If we do not uniformly succeed in attaining that object, this is no more than may be said against any other surgical proceeding; but I hold that enough has been shown in favour of the catgut ligature to entitle it to a thorough trial in operations for aneurism; and I myself believe that its

success will be much promoted by providing drainage from the wound, and dressing the latter on Lister's method. My reason for avoiding the use of the spray in the operation hitherto is the great practical inconvenience of operating in a wound which is constantly filled with fluid; but if operators who have tried this plan are satisfied of its advantages, it may become our duty to try it.

I now read the notes of my late case.

Joseph D., age 34, footman, admitted into St. George's Hospital June 9, 1875, gave the following history:—He had always enjoyed good health, had for some years been in the habit of carrying heavy trays, but did not recollect any distinct strain. Three weeks before admission he noticed an aching pain in the left ham, 'as if the knee were tired.' This pain was increased on sitting down or on suddenly extending the limb. Five days before admission he noticed some swelling of the left foot and ankle. He was seen by a surgeon, who advised him to go to the hospital.

On Admission.—A somewhat pale and delicate-looking man, but exhibiting no symptoms of visceral disease. In the lower part of the left popliteal space was a swelling apparently rather larger than a walnut, pulsating forcibly, and with distinct lateral dilatation. Pulsation in dorsalis pedis distinct, but none could be felt in the posterior tibial (it could, however, be felt after the œdema had subsided). The foot and lower half of the leg were œdematous. There was neither thrill nor bruit in the tumour, and the pulsation appeared to be *increased* by flexing the knee. Very slight pressure on the femoral artery caused the pulsation to cease, and the swelling to collapse, and on the pressure being removed it regained its former size after four or five pulsations. The patient was placed on ordinary diet, without stimulants, and the limb raised in a rest.

June 13.—Passed a good night. Œdema had entirely disappeared. Had a light breakfast early in the morning, and a mutton chop at 9 A.M. At 11 A.M. the limb was wrapped in cotton wool, and digital pressure applied to the femoral artery in the groin, and continued for 22 hours (viz. till 9 A.M. June 14th). During this period the tumour was examined at intervals, and the pulsation appeared steadily to diminish.

14.—At 9 A.M., on the pressure being discontinued, there was very considerable diminution of the pulsation, and

the tumour no longer entirely collapsed when the artery was compressed. The sac appeared to contain a considerable amount of soft coagulum, especially at its outer part. The patient bore the compression well, and during the latter four hours he slept at intervals; he complained of considerable numbness in the limb, and the integument was somewhat red and tender at the seat of pressure; there was no perceptible loss of temperature in the limb. After an interval of 24 hours, during which an air-pad was applied to the tumour, the pressure was resumed and continued for six hours, with no marked improvement. On each of the two succeeding days digital pressure was applied for six hours. At the termination of the second of these periods there was very slight pulsation, and a collateral vessel, about the size of the radial artery, could be felt behind the outer condyle. The following morning the pulsation was as distinct as ever, and pressure was applied by means of a conical weight (7½lbs.) for twelve hours daily for four days. At the end of this period there was no improvement. On July 16 digital pressure was again had recourse to, and continued for 31 hours, but without any improvement. Integument somewhat sore. Treatment suspended for a few days, and then a Carte's tourniquet was applied for eight hours daily for three days. There being still no improvement, it was decided in consultation to ligature the femoral artery.

Aug. 12.—A stout ligature of carbolized catgut was applied to the artery at the apex of Scarpa's triangle, a vein on the inner side of the sheath being secured and divided. The wound was dressed according to Lister's antiseptic method, and the limb enveloped in cotton wool.

13.—Passed a good night. Temperature of limb normal. No return of pulsation in the tumour. Pulse 130 and rather weak. Tenderness and swelling in the course of the saphena vein.

14.—No pulsation in aneurism or arteries of the foot. Foot warm, except the extremity of the great toe, which was cold and of a slightly dusky colour. The dressings were changed; wound healthy; no redness or appearance of suppuration. Swelling and tenderness in course of saphena vein increased, but no redness.

15.—The great toe had re-assumed its natural temperature and colour.

16.—Until 6 P.M. had no unfavourable symptom, but at this time the house surgeon was called to him and found

him with a frightened and anxious expression, tossing about, talking rapidly and incoherently, at intervals shouting loudly for drink, and endeavouring to strike those who were near him. In a short time he became quieter, but at 10 P.M. suddenly became very noisy, endeavouring to get out of bed, and shouting out at the top of his voice. Ordered chloral hydrat. 40 gr., after which he was much quieter, and passed a fair night. In the meantime an empty bottle, smelling strongly of gin, had been found under his pillow, and another bottle, containing about six ounces, under the bed.

17.—Does not recognise any one; has still the same frightened expression; answers very hurriedly and not to the purpose when spoken to, and moves about in bed in a restless manner. The wound was dressed, and there was no redness or appearance of suppuration.

18.—Talking rapidly and incoherently, and pulling the bedclothes about. Sordes on the lips. Tongue brown and dry. Skin hot, and perspiring profusely. Ordered ammon. carb. gr. v.; hst. ammon. citrat. eff. ℥iss. every four hours. Towards evening became quieter and more sensible, but evidently much weaker.

19.—Early in the morning again became talkative. At noon the pulse was very weak, and the patient was evidently sinking. Muscular twitchings occurred in the limbs, and he died at 1 P.M.

Post-mortem.—The wound was united for about an inch at its upper part. There was suppuration in the cellular tissue of the groin, also in and around the femoral sheath from the groin to the popliteal space. The ligature in the artery was embedded in lymph. Immediately above the bifurcation of the popliteal artery was an aneurismal sac about the size of a walnut, filled with dark coagulum. The vein was adherent to the sac, but otherwise appeared to be natural. There was slight œdema of the foot, and the integument over the point of the heel was hard, dry, and of a dark colour. No examination of the rest of the body was permitted.

Remarks.—I confess to having tied this artery with great reluctance, though I was unaware of any drunken habits in the patient, such as the catastrophe points to; yet his nervous, pallid look, and his excitability in some particulars—though he was extremely tolerant of pressure, probably from dread of a cutting operation—made me very unwilling to resort to the latter, especially for so small a tumour. In fact, I discussed with my colleagues the propriety of allowing the case to go

without treatment. But the occurrence of pain and œdema before his admission showed that this would not have been justifiable. Had I thought of the application of Esmarch's bandage, or had the interesting case which Staff-Surgeon Walter Reid published in the 'Lancet' of September 25 occurred earlier, I should have been glad to test its effect in this instance.

VIII.—*Two Fatal Cases of Acute Pyelitis and Nephritis, apparently consequent on Gonorrhœa.* By C. Murchison, M.D., F.R.S. *Read November* 26, 1875.

THE two cases which I now bring before the notice of the Society occurred several years ago in my practice in the London Fever Hospital. Inasmuch as both patients were in an unconscious state when admitted into hospital, and no history was obtained of either until after death, the real nature of the cases was only revealed by post-mortem examination, and consequently they were not observed with that minuteness which would have been desirable. It is particularly to be regretted that no observations were made as to the temperature and the characters of the urine. Still the post-mortem appearances, which were very similar in the two cases, left little doubt as to their real nature. Although John Hunter observed that the 'irritation' of gonorrhœa might extend to the bladder and thence to the kidneys, I do not remember to have read or heard of any other instances in which gonorrhœa has proved fatal in the manner now related; but members of the Society engaged in the practice of surgery may possibly have met with such cases. A circumstance worth noting is the extremely rapid progress of both cases after the first symptoms of danger showed themselves.

Case I.

Stephen H., æt. 28, a grocer's assistant, was admitted into the London Fever Hospital on June 4, 1865, in a state of profound coma, with low muttering delirium, and dry, brown tongue. Three hours after admission he died, having had several attacks of general convulsions. The urine could not be obtained and the temperature was not taken, but there was no eruption on the skin and no sign of inflamma-

tion in the chest or abdomen, but there were moist sounds over the dependent parts of both lungs. After his death it was ascertained that he had been suffering for some time from gonorrhœa, for which he had been taking copaiba, and that the cerebral symptoms had come on suddenly only thirty hours before admission. In fact, he had gone to his employment on the morning of the day before admission into hospital.

After death the entire length of the urinary passages, from the anterior end of the urethra to the pelves of the kidneys, was found to be in a state of intense inflammation, the mucous membrane being brightly injected and its surface bathed with pus. Both ureters were full of thick yellow pus. Both kidneys were in a state of acute nephritis; the pelves of both were full of pus. The kidneys were much enlarged, but their outer surface was quite smooth; they were of a deep purple, almost black hue, and a quantity of dark blood dripped from their cut surface. Both lungs were much congested in their dependent parts, and in the lower lobes were a few small patches of incipient lobular pneumonia. The other organs were healthy; there was no dropsy.

Case II.

Maria D., æt. 25, a lady's maid in a nobleman's family, was admitted into the London Fever Hospital on Jan. 31, 1866. On admission she was quite unconscious, but constantly moaning; her countenance was dusky, and her breathing was laboured. The pupils were equal, but there was slight internal strabismus of both eyes. There was no eruption on the skin, but cerebral maculæ were well-developed. The urine was passed in bed; the bowels were not open. No note was made of the pulse or temperature, but there were signs of hypostatic congestion of the lungs.

An aperient enema was administered; the head was shaved and cold applied to the scalp, and a blister to the nape. No improvement followed; the breathing became stertorous, and the stupor more profound; and after two convulsive fits patient died at 11 P.M. of Feb. 2.

After death it was ascertained that she had appeared quite well during the day before admission, having travelled on that day from Paris with the cook who served in the same family as herself. On reaching London in the evening she ate a good meal, but during the following night she wandered

a good deal, and on the morning of Jan. 31 she had a convulsive fit, followed by unconsciousness.

At the post-mortem examination the membranes and substance of the brain were found to be intensely hyperæmic; but there was no exudation of lymph and no sign of tubercle either within the cranium or in the lungs. The lungs were congested in their dependent parts, but in other respects were healthy. Both kidneys were in the early stage of acute nepritis—large, smooth, and almost black from intense congestion. The ureters and the pelves of the kidneys were full of thick yellow pus. The bladder also contained pus. The lining membrane of the vagina, the urethra, bladder, ureters, and pelves was intensely red.

IX.—*Case of Acute Cancer of Liver, with Pyrexia, in a Man aged* 24. By C. MURCHISON, M.D., F.R.S. *Read November* 26, 1875.

JAMES C., æt. 24, carpenter, admitted into St. Thomas's Hospital, Nov. 6, 1872. No history of malignant disease in family, and previous health good. Six months before, strained himself whilst turning a crane; left testicle swelled and was tender, but general health appeared unaffected. Six weeks before admission, first complained of pain in right side of abdomen, and began to loose flesh and strength. Soon after a doctor discovered a swelling in right hypochondrium which rapidly increased. Had no rigors, but twice during sleep had perspired profusely.

On admission, emaciated; hectic flush on cheeks; temperature 101·3° F. Suffers much from pain in region of liver and from dyspnœa. On right side of abdomen is a visible bulging, continuous apparently with the liver, its lower margin extending almost to brim of pelvis, and upper margin of hepatic dulness reaching to 1½ inch below nipple; surface of swelling firm, smooth, and moderately tender. Distinct jaundice of skin and conjunctivæ; no ascites; no enlargement of abdominal veins. Tongue moist, slightly furred; no appetite; much thirst; no vomiting; bowels open but not loose; bile in stools. Urine 1018; contains copious lithates, some bile-pigment, and a trace of albumen. Lies on right side; respiration 32, thoracic, some cough, but no expectoration; sibilant râles over both lungs, and over back of

both lungs, but chiefly on right side; breath-sound feeble, and slight impairment of resonance on percussion. Pulse 120; heart-sounds normal; left testicle twice the size of right, hard, but not tender.

Patient was ordered a milk diet and an effervescing saline mixture. He had also morphia draughts, subcutaneous injections of morphia, and laudanum poultices to relieve pain; but he got rapidly worse.

Nov. 8.—Pulse 134. Vomited last night a greenish flocculent matter, containing no food.

Nov. 11.—Has repeatedly vomited green bilious matter, and jaundice is now very decided. Liver increased in size, more bulging below ribs, and its dulness extending up to within ¼ inch of nipple; surface smooth and firm. Tongue red and dry; bowels open daily. Very prostrate, and occasionally delirious. No rigors or night sweats. Pulse 120; a systolic bruit audible at base of heart, and propagated upwards to clavicles and neck.

Nov. 13.—Delirium, jaundice, and enlargement of liver increased. The swelling below ribs is more elastic. Yesterday had a decided rigor, followed by heat and perspiration.

Nov. 15.—Much more prostrate, but no more shivering. Skin dry. Still delirious. Got rapidly worse, and died on Nov. 16.

The following is a note of observations of the temperature:

Nov.	6,	Morning	—	Evening	101·2
„	7,	„	101.1	„	103
„	8,	„	99	„	101.4
„	9,	„	98·5	„	101·2
„	10,	„	99	„	100
„	11,	„	100	„	103
„	15,	„	98·4	„	—

Autopsy.—Liver much enlarged, and before removal measured 12½ inches vertically. Its entire substance was studded with numerous masses of cancerous deposit, intensely vascular, and varying in size from a pea to a chestnut. Many of them were at the surface of the organ, but did not project from it. The cancerous masses were not softened. On section they yielded a milky juice, containing numerous cells with large nuclei such as are common in cancer. A mass of similarly affected glands was found in neighbourhood of left kidney, and extending along vessels to left testicle, which also contained a vascular tumour the size of a cherry. Both lungs also contained numerous tumours similar to those in

liver. There was no sign of recent inflammation in any part of the body. Heart healthy.

Remarks.—Little is known as to the change of temperature in cancer. Wunderlich makes the following observations upon the subject:—

'It is a peculiarity of cancer cases that elevated temperatures are comparatively rare, and that the temperature generally maintains itself on a normal or even a subnormal plane, which however by no means precludes the occurrence of high temperatures through intercurrent complications, or at the close of the disease. But fever temperatures of long duration are at least rare in cancer patients.'

In confirmation of this opinion Dr. Woodman, the translator of Wunderlich's treatise, quotes cases observed by Drs. Finlayson, Da Costa, and E. B. Baxter, and adds:—'The few observations I have myself made of carcinoma of the liver, uterus and breast, before marasmus had set in, only show very slight elevations of temperature, or none at all; never above 101° Fahr., unless from some complication; whilst I have found subnormal temperatures with rapid pulse in several cases of advanced cancer with emaciation.' *

My own experience coincides with the opinions now quoted, and I believe with those of most observers, viz. that in cancer, unless there be some inflammatory complication, the bodily temperature is at or about the normal standard, and accordingly that in the case of any obscure internal disease, a continuous elevation of temperature would in itself be opposed to the diagnosis of cancer. But the case now related proves that this rule is not absolute.† In this case, moreover, the age of the patient, 24, was opposed to cancer of the liver; while not only the pyrexia, but the rigor, the previous injury and enlargement of the testicle, the rapid course, and the cerebral symptoms, all favoured the diagnosis of pyæmic inflammation in preference to cancer of the liver.

The details of the case are less perfect than I could have wished, the Case-book containing my notes having been lost. I have delayed publishing the case in the hope that the book would be found; but as this appears now to be improbable I have thought that the case as it now stands is worthy of

* 'On the Temperature in Diseases.' By C. A. Wunderlich. 'Syd. Soc. Trans.' 1871, pp. 429, 430.

† Since this case was communicated to the Society I have met with another instance, in a lady aged 56, of acute primary and uncomplicated cancer of the liver, with a temperature of 102°.

being put on record. The details now published are taken from notes made on the bed-ticket, and by the Hospital registrar.

X.—*Case of Hip-Joint Amputation.* By Berkeley Hill.

Read November 26, 1875.

Mrs. W., æt. 29, whose left thigh was amputated at the hip by me on August 12, 1874, to remove a rapidly growing tumour of the upper part of the limb, was exhibited on Nov. 26, 1875, to show the remarkably small and supple cicatrix that has formed on the site of the anterior flap, which wholly sloughed away after the operation. At the time of the operation the left thigh, measured at 12 inches above the patella, was six inches more in circumference than the right. The tumour surrounded the femur and projected in the groin. A very limited rotation of the femur could be obtained without moving the growth; in other respects they appeared to be closely connected. At the operation the tumour (a round-celled sarcoma) was found to spring from muscles at the back of the thigh and to embed the superficial femoral artery as well as the femur in its prolongations. This disposition rendered necessary a dissection of the skin of the groin from the surface of the tumour, leaving the femoral artery cut short in the posterior flap. In consequence of this separation and division of the nutrient arteries the anterior flap sloughed away for two inches above Poupart's ligament. The healing of the surface was excessively tedious, but was so far accomplished by Dec. 13, 1874, that only the acetabulum remained uncicatrised. During this period skin grafting was practised continuously, more than a hundred transplantations having been made in consequence of the repeated breaking up of cicatrix after it had formed. The patient then left the hospital for Eastbourne, where she stayed some weeks, but returned to hospital with the scar widely broken away through the weight of the posterior flap pulling across the pubes and anterior iliac spines. A frame was then fitted round the hips, carrying a spring which supported a pad that thrust the buttock forwards to the ulcerating surface, and thus prevented the downward strain. Healing steadily proceeded until, in April 1875, she was again able to leave the hospital for her own home, the acetabulum being not quite healed. In May, about a month after she

left the hospital, erysipelas attacked the wound. On the subsidence of this the healing process was speedily completed. The patient is now (fifteen months after operation) in perfect health, drives a sewing-machine several hours daily with her remaining leg, and can walk three or four miles with crutches.

As yet there is apparently no repetition of the tumour by enlargement of the lymphatic glands in the left iliac region, nor is the liver enlarged. The scar is small, easily movable over the pubic bone and iliac spines, soft and yielding; the islands of epithelium that spread from the skin-grafts being plainly distinguished from the lines of cicatricial tissue permeating among them. The acetabulum, quite dry and free from scabs, is filled up to the capacity of a walnut-shell. The tumour, weighing between two and three pounds, is in University College Museum.

The case illustrates the superiority of a surface rendered supple by the spread of epithelium from skin-grafts to one of ordinary cicatricial tissue. The loss of the anterior flap after the operation destroyed the skin of a very large surface, to cover which seemed at first almost hopeless. Yet a sufficient number of grafts united with the surface to change the quality of its granulations, and produce a soft yielding scar, able to accommodate itself to the bony projections it overlies. Another point worth noting is the fact that subsequent repeated tearing and fresh granulations, even erysipelatous inflammation of the scar, did not destroy the skin-like character of the surface.

XI.—*Removal of a large Melanotic Sarcoma of the Eye and Orbit by Excision and the use of the Chloride of Zinc Paste; Preservation of Eyelid; Recovery.* By GEORGE LAWSON. *Read November* 26, 1875.

MARY K. was admitted into the Middlesex Hospital on April 27, 1875, suffering from a large melanotic tumour which originated in an eye which had been lost twelve years. The tumour having distended the globe had burst through its outer coat and filled the orbit, pressing forwards the eye and both upper and lower eyelids, as is shown in the woodcut (woodcut 4), drawn from a photograph. I removed the eye and tumour from the orbit in the usual way, and then applied the chloride of zinc, and in such a manner that I succeeded in saving the upper eyelid. One of the great disadvantages of the

use of the chloride of zinc in such cases has been that owing to the running of the paste into the cellular tissues of the eyelids both lids have been destroyed by it. The plan which I have adopted during the last two years has been the following:—

After the eye and tumour have been excised, pressure is made into the orbit until all bleeding has ceased. The mouth of the conjunctival bag from which the globe has been enucleated is now to be held open with two pairs of forceps whilst the chloride of zinc paste, spread on small strips of lint, is passed into it and neatly plastered round the sides of the orbit. A small piece of cotton wool is next introduced to keep the

Woodcut 4.

strips of lint *in situ*, and the mouth of the conjunctival bag is closed over the whole by a single continued suture. A layer of lint is then placed over the conjunctiva, and upon this the lids are closed and kept in position by a compress of lint and a roller. After the operation a subcutaneous injection of morphia is given to check the pain caused by the action of the chloride of zinc.

The patient progressed favourably, and the sloughs separated, but after about ten days there was a slight recurrence at the inner and lower angle of the orbit, and to this I again applied the chloride of zinc paste. She was discharged from the hospital on May 25, and has since continued quite well.

The patient at the time of her admission into the Hospital

was suffering excessive pain, and on account of the great size of the growth it seemed to be a very unfavourable case. Since the operation she has been perfectly free from all suffering.

Woodcut 5.

She may now live for some years, and possibly die from a recurrence of the disease in some internal organ which may destroy life without pain, as such internal growths frequently do. Her present appearance is shown in woodcut 5.

Tumour growing from the Floor of the Orbit; removal without inflicting any Injury on the Eye.

A. C., æt. 52, was admitted into the Middlesex Hospital on Nov. 9, 1875. There was a small firm tumour at the inner and lower part of the orbit, which could be easily felt with the finger, and pressed the eye upwards and outwards. Before commencing the operation the patient stipulated that I was not to remove the eye under any circumstances. I made a free semi-circular incision beneath the lower eyelid, and then with a little dissection raised the lower eyelid so as freely to expose the free surface of the tumour and the edge of the orbit. With a little further dissection I was enabled to trace the tumour along the floor of the orbit to the portion of periosteum from which it sprung, and then

to detach it. During the operation the eye was pressed upwards against the roof of the orbit, but not with sufficient force to cause it any injury. The tumour was encapsuled, and appeared to spring from the periosteum far back in the orbit. It was about the size and shape of half a chestnut, much flattened where it was pressed between the eye and the orbit, but rounded at its free external border.

The patient rapidly recovered, and you now see him, on the sixteenth day after the operation, with the wound healed. The growth was examined by Dr. Coupland, and he found it to be a lymphoma.

The structure of the tumour was (1) a fine fibrillar network, interspersed with broader bundles of connective tissue, and (2) small round cells contained within and concealing the fibrillar network. Finally, in parts of the sections, are a few isolated muscular fibres.

XII.—*Two Cases of Diabetes successfully treated by the Skim-milk Method.* By Arthur Scott Donkin, M.D. *Read December* 10, 1875.

CASE I.—A. S., a builder, æt. 45, residing in the country, of robust build and middle stature, married, of temperate habits, and always healthy until recently. Three years previous to this report some large timbers fell on him, severely crushing his chest and inflicting a stunning blow on the head, which left him unconscious during sixteen hours subsequently. He still feels the effects of these injuries.

At the end of June 1875, in consequence of a collision with a cab, he fell between the shafts of his own cart, but holding on, was dragged about a quarter of a mile, and then fell on the road, and was severely bruised and shaken, but not stunned nor apparently injured in the spine.

Soon after the accident he began to suffer from thirst, polyuria, and great debility, with rapid loss of flesh; and though placed under medical treatment, his real condition was not detected by his medical attendant.

Being totally incapacitated from following his occupation, he went to Norfolk for change of air, and when there his sister suspected his ailment to be diabetes. On his return home he communicated this to his medical adviser, who, without examining his urine, simply told him he believed he

was suffering from this disease, and accordingly prescribed various remedies, but without any beneficial result. The diet of the patient was not, however, restricted, and consequently the disease made rapid progress, and its salient features became greatly intensified.

On Oct. 6 following (1875) the patient consulted me, and stated that for several weeks previously he had voided from 12 to 14 pints of urine daily; and a specimen passed on the morning of that day had a density of 1045, and contained 28 grains of sugar to the ounce. His thirst was unquenchable, his mouth parched, his skin dry, and his appetite voracious; his vision, moreover, was much impaired, and his nights sleepless. The very frequent desire for micturition compelled him to rise often during the night.

There was also great prostration, debility, and loss of flesh to the extent of 3 stone 8 pounds during the preceding three months; the pulse was feeble, though not frequent, and there were no complications to be detected.

On the day following (Oct. 7) the patient was placed on the skim-milk treatment: 7 pints of skim-milk, divided into meals, were allowed, to the exclusion of every other kind of food.

At the end of the second day of the treatment the urine was reduced to 5 pints, with a specific gravity of 1040. During the previous night he slept soundly, and arose only twice to micturate; thirst gone and hunger much abated. The skim-milk was now increased to 8 pints daily.

During the five days following Oct. 9 the density of the urine rapidly fell, and the quantity averaged 4½ pints. That which was voided on Oct. 14 had a specific gravity of only 1010, and *did not contain* the slightest trace of sugar. Consequently the sugar totally disappeared from the urine at the end of the *seventh* day of the treatment.

At this period the patient felt remarkably improved; his thirst was quite gone, and his inordinate appetite appeased; his vision was likewise much improved, and he was quite relieved from the previously oppressing debility and prostration. His sleep was now profound and refreshing, and no longer interrupted by nocturnal calls to micturition. From the above date his improvement in general health and strength was remarkably rapid. The daily allowance of skim-milk was now increased to 9 pints, a portion of it being converted into curd by the essence of rennet.

At the end of the fourth week of the treatment (Nov. 5) the patient felt 'quite well' in every respect, and his vision was restored; he was consequently allowed three-quarters of a pound of lean chop, with greens, and the quantity of skim-milk was reduced to 6 pints daily.

A week after the above date (Nov. 12) the urine was reduced 3 pints, with a density of only 1012, and absolutely free from sugar. He was now permitted an additional chop, with greens, for breakfast; but no other change was made in his diet.

On Nov. 18—the completion of the sixth week of the treatment—his health being now quite restored, and there being a complete absence of sugar in the urine, he was allowed fish (a sole) for supper as an additional meal, 6 pints of skim-milk daily being continued. Three days afterwards (Nov. 21) he voluntarily removed his name from the sick-list of his club and resumed his occupation, which he had been compelled to abandon during a period of nearly five months previously.

To-day (Dec. 10), when I present the patient to the members of this Society for examination, his urine, passed in my presence this morning, had a specific gravity of 1017, and did not contain a trace of sugar when tested by Fehling's solution of copper and liquor potassæ; the daily quantity now averages from 4 to 4½ pints, having increased somewhat during the recent cold weather. The patient is, as you will observe, in excellent health, and following his occupation; he still continues the same diet, with the addition of a cup of tea night and morning, and occasionally a little pale brandy when he feels faint and requires a stimulant.

Remarks.—By some this may be considered a case of diabetes resulting from traumatic injury. This, however, I do not believe, although the accident in June may possibly have accelerated the development of the disease.

The severity of the disease, in this case, was clearly shown by the intensity of the symptoms—the great and rapid loss of flesh especially, and the very large quantity of sugar voided in the urine daily, amounting in round numbers for several weeks to at least 15 ounces, or even a pound or more, daily.

A most important fact in relation to treatment in this case is, that the very copious formation of sugar and its attendant formidable symptoms were completely arrested in the course of a week under the influence of a diet containing

at least 8 ounces of sugar in the form of *lactose* administered daily. Another striking illustration is thus afforded in corroboration of my previously-published experiments, that *milk-sugar, as a constituent of milk,* does not contribute to the formation of diabetic sugar, as has been contended by Bouchardat and his followers. *It is in this respect* that the skim-milk treatment differs from all previous diabetic formula introduced into practice for the treatment of diabetes.

Case II.

The second case is that of a child nearly 10 years of age, the daughter of a gentleman of position, residing in the country, whose family and wife's family have been remarkably free from constitutional taint, except that his mother died of diabetes. The child is large for her age, being 4 feet 10 inches in height, and her weight being 5 stone 10 pounds. She was always remarkably healthy until the commencement of her recent illness. But for a period of three months prior to the beginning of October, 1875, she suffered from great thirst, excessive appetite, polyuria, great loss of flesh, and other characteristic symptoms. Mr. Thomas, of Llanelly, was now called in, and he at once detected diabetes in a severe form. The specific gravity of the urine, which was very copious and loaded with sugar, ranged from 1040 to 1045. She was immediately put on a restricted meat diet, and given iron as a tonic and Dover's powder at night. This treatment reduced the quantity and specific gravity of the urine somewhat, but otherwise did no good, the urine sugar still continuing to be very copious.

At the request of the child's father, Mr. Thomas consulted Sir Thomas Watson as to the treatment to be pursued in the case. Sir Thomas at once recommended the skim-milk method, and consequently the child came under my professional care.

On Oct. 17, 1875, the patient was placed on a strict skim-milk diet, and under it the symptoms of the disease vanished with remarkable rapidity, and the specific gravity of the urine fell to 1016 within a week. On Oct. 29, the thirteenth day of the treatment, the density of the urine was only 1012, not a trace of sugar could be detected, and all the symptoms of the disease had disappeared.

On Nov. 4 the child was taken to Sir Thomas Watson for examination, in order that he might have an oppor-

tunity of observing the effect of the treatment. Two days afterwards I received the following report from Sir Thomas:—'The intelligent father told me that the girl had been suffering urgent thirst, craving hunger, and passing copious urine of the specific gravity of 1045. That on the adoption of the skim-milk treatment all the symptoms had been entirely removed in thirteen days, and that the thirst and hunger ceased after three days of the treatment. Mr. P. brought a specimen of that day's urine, which I tested in his presence; its specific gravity was 1015, and did not contain a trace of sugar nor any albumen.' On Nov. 9 the patient was taken back to her father's residence, and I received intelligence on Dec. 5 that she is in excellent health and spirits, her urine having an average specific gravity of 1015, and quite free from sugar, for which it is daily tested. She has since the commencement of the treatment, during a space of little more than six weeks, gained 5 pounds in weight; her diet at the present date, Dec. 10, consists of skim-milk, beaf-tea, mutton chop and greens. She is now under what I have termed the second or transitional stage of the dietetic treatment of diabetes.

These two cases are both instructive illustrations of the efficacy of the treatment in completely arresting the disease when *applied* early, and before it has passed into an advanced and incurable stage in which the general disorganism and lowered vitality produced by it have become irreparable.

One very important element must be taken into consideration in estimating the value of the treatment adopted in these cases—namely, the fact that it being the most recent remedial measure introduced for diabetes in this country, it has hitherto, as a very general rule, been applied as the *last resort* after all other means have failed; and too often, be it observed when the patient was in the last stage, and worn out by the disease, and death even pending. This observation is especially applicable to a large proportion of hospital patients. It should therefore excite neither disappointment nor surprise that it should altogether fail under such utterly hopeless conditions. Its real value in the future must be tested by the results obtained from it as a *primary* remedy, after the timely detection of the disease.

Postscript.—In order to show how far the cure has been permanent in these two cases, it is requisite that the history

of each should be recorded subsequent to the date of the reading of the above report (Dec. 10, 1875) and up to the date of going to press (July 4, 1876), a period of nearly seven months.

The male patient commenced on Dec. 11, 1875, to take a roll of bran gluten bread to each solid meal; and as its consumption did not cause a return of sugar in the urine, at the end of a fortnight wheat-meal bread was substituted for it. This bread was prepared from the meal taken direct from the mill and not refined by sifting; it may therefore be regarded as a natural wheaten bread containing a proper admixture of bran and not too much starch. The continued use of this bread and a mixed generous diet into which milk still enters largely has not reinduced the disease. The patient's urine continues free from sugar, his health is excellent, and he has increased much in flesh and weight.

As regards the second case, that of the child, her father wrote to me on June 5 last as follows:—'The child's health is remarkably good; she never looked better, and is quite strong, and takes long walks without fatigue. Her diet now consists of egg or cold meat and one pint of skim-milk for breakfast; a curd at 11 A.M.; dinner of fish or soup and meat, with spinach, greens, &c. at 1·30 P.M.; a pint of skim-milk at 4·30, with a roll of bran gluten bread; and at 7·30 meat and vegetables. I must tell you the specific gravity of the urine varies from 1012 to 1025, but I cannot find the least trace of sugar, though I carefully test (boil) it with both the copper test (Fehling's solution) and liquor potassæ. Since commencing the skim-milk treatment in October last she has gained 12 pounds in weight.' Since the date of this letter, and for nearly a month, wheaten bread, as in the previous case, has been substituted for the bran gluten, and without any ill effect.

This case and others I have treated convince me that diabetes is curable in childhood and early life when the disease is recognised early and the constitution good. On the other hand, I have found, contrary to what has been asserted by certain writers, that the disease is quite intractable, especially when considerably advanced, in subjects at or beyond the middle period of life.

XIII.—*A Case of Lymphadenoma.* By WARRINGTON HAWARD. *Read December* 10, 1875.

SARAH E., æt. 4, was admitted under my care into the Hospital for Sick Children, June 27, 1873. She was a fairly nourished but pale child, her face showing the scars of small-pox. On the left side of the neck was a lobulated tumour, consisting of enlarged glands, and extending from the ear above, nearly to the clavicle below, and from one inch anterior to the spine, to the median line in front. It measured six inches transversely, and four and a half inches vertically. The tumour was most prominent at its upper part, where it was composed of two large glands divided by a sulcus, its lower part consisting of numerous glands, gradually diminishing in prominence towards the clavicle. The enlarged glands were elastic and moderately firm; they were not adherent to the skin, and could be moved over the parts beneath them. The superficial veins of this side of the neck were prominent, the skin was natural. No enlarged glands could be felt on the right side of the neck nor in any other part of the body. The chest-sounds, both to percussion and auscultation, were natural. There was no enlargement of the liver or spleen, nor any increase of the number of white globules in the blood. The temperature, the pulse, and the urine were natural, the bowels confined.

The family history was as follows:—Father healthy; the mother, and a maternal aunt and uncle, were dead, it was said, of consumption. The parents had besides this patient one other child, who was healthy and strong.

This child had had measles, whooping-cough, and small-pox, the latter a year previous to admission into the hospital. It was soon after her recovery from small-pox that an enlarged gland was noticed behind the left ear. The gland gradually increased in size, and when it had attained about that of a walnut, another made its appearance just below it, and the two continued to grow steadily. From this time she began to lose flesh somewhat, but no other glands were noticed till three or four weeks before she came to the hospital, when several others were observed lower in the neck than the first two, and all of which grew rapidly. The child had been well and strong up to the time that she had small-pox, but since then her appetite had fallen off, she had become pale and

rather thinner, and was more easily fatigued. She was intelligent and cheerful.

As there seemed every reason to believe that the disease of the glands was confined to those that were visible in the neck, I determined to remove these, in the hope that the general infection might be thus prevented or delayed. As the enlarged glands occupied the whole of one side of the neck, I thought it best to perform so extensive a dissection in two operations.

On July 12, the child being under the influence of chloroform, I removed all the enlarged glands in front of the sterno-mastoid, and thus cleared the anterior triangle of the neck. The carotid sheath was exposed, and several glands removed from the front of the trachea. The capsule of the glands was opened, and most of them were shelled out without much difficulty. There was very little bleeding. The wound was sponged out with solution of chlorine of zinc, and closed with sutures, excepting at its most dependent part. It was dressed with Lister's protective and antiseptic gauze.

July 13.—The child had suffered very little from the operation. Temp. 100°; pulse 100. Had slept fairly well.

14.—There was a little more fever. Temp. 101·4°. Child a little restless. Wound quiet. From this date the traumatic fever rapidly subsided, and the wound healed kindly, so that on July 29 only a small and superficial portion remained unhealed.

30.—I removed all the enlarged glands from the posterior triangle of the neck. When the more prominent glands had been removed, numerous smaller ones were seen, and I was careful to take away, by a somewhat tedious dissection, every one that was visible. The wound was treated in the same way as at the first operation. There was a much greater amount of shock from the second operation than from the first, and on the following day the pulse was 152 and very weak; temp. 104°. The child, however, took food and stimulants well, and on the third day she was sitting up and cheerful, and the temperature had fallen to the normal degree. The upper part of the wound healed immediately, but there was some suppuration about the lower end; this gradually diminished, and by the end of August the wound was healed. The child had now gained flesh and colour, was very lively and active, and in very decidedly better condition than before the operation. She left the hospital Aug. 30. This improvement, however,

was but temporary, for although she continued in apparently good health, she was re-admitted to the hospital on Oct. 9, with several slightly enlarged glands near the angle of the jaw on the left side. These rapidly increased in size, and on Nov. 5 enlarged glands had appeared in both axillæ, and also on the right side of the neck. All these grew quickly, and percussion gave evidence of similar growths in the mediastinum. The heart and lungs still appeared to be natural, and there was no perceptible enlargement of any of the abdominal viscera. She now rapidly emaciated, and became very pale. The blood still showed no increase in the number of white globules. The temperature became elevated, and at night was usually as high as 102°. In January 1874 she took to her bed, but still took food well, and also cod-liver oil and iron. The glands both in the neck and axillæ continued to increase in size, remaining of the same consistence, so that by the end of February there were great masses on both sides and in front of the neck, and in each axilla; there were also some about the size of almonds in the right groin. The child was now reduced almost to a skeleton, but continued to take food well. There was no diarrhœa, but she had slight cough, and large crepitation was heard over both lungs. The temperature was usually at night 103°, and about 98° in the morning. From this time she gradually became weaker, and, without any notable change of symptoms, died on March 14.

The post-mortem examination was made 26 hours after death. The body was very emaciated; weight 25lbs. There was no rigor mortis. On the left side of the neck, and anterior to the sterno-mastoid muscle, was a mass of enlarged glands the size of the fist, and extending from the border of the jaw above to the clavicle below, and forwards to the median line. On the right side of the neck in the corresponding position was a pyriform mass of glands, prominent and lobulated above, and diminishing in size towards the clavicle; and exactly in the middle line, over the trachea, was a gland the size of a walnut. In each axillæ were similar masses, about the size of an orange, of enlarged glands. In the right groin were also several glands about the size of almonds. There were no enlarged glands in the posterior triangle of the neck, all the disease being in front of the sterno-mastoids. The enlarged glands had the same characters as those removed during life, so that one description will serve for all. The masses consisted of a number of

glands varying in size from a hazel-nut to a hen's egg, and connected together by a thin layer of connective tissue, which surrounded each gland as a capsule. They had a somewhat cerebriform aspect, but were firmer than brain matter, were of a pale grey colour, streaked here and there with pink, were but little vascular, and not at all caseous. Microscopically they exhibited a fibrillated stroma, in the meshes of which were numerous lymph-like cells, the relative proportion of cells to stroma varying in different specimens. In the anterior mediastinum were many similarly enlarged glands. There were numerous firm adhesions of the right pleura; the left pleura was natural. The lungs were concongested throughout, and contained a great number of grey semi-transparent miliary tubercles. The heart was natural; weight 3½ oz. The liver weighed 23¼ oz. It contained in every part closely-packed granules of adenoid growth. These were most of them of the size of pins' heads, but some few were as large as peas. The spleen weighed 3¾ oz., and contained numerous similar growths, some of which near the surface were as large as marbles. The kidneys weighed 5½ oz.; they were pale and smooth, and exhibited near the bases of the pyramids a few small granules of the growth. The peritoneum was studded with similar growths, and in the submucous tissue of the ileum and jejunum were also a few scattered granules. The mesenteric glands were slightly enlarged. The genito-urinary organs were natural. The brain was anæmic, but otherwise natural; weight 31 oz.

When Dr. Hodgkin gave that admirable description of this disease which led to the association of his name with it, he said that concerning the treatment, either curative or palliative, he had no suggestion to offer, for no treatment that he had seen adopted had been of any avail. I fear that we must confess that, in the forty years that have since then elapsed, we have made no advance in the treatment of this fatal affection. The question which I wish to raise before the Society is whether, when the disease commences in one set of accessible glands, by the removal of these the general infection of the other parts might be prevented or postponed. I think there can be no doubt that the disease is often for a time completely local, at any rate in its manifestation, and that it may even prove fatal before the general infection has occurred. I have examined the body of a child who died with a condition of the glands of the neck similar to the case

I have described, in which no such growth was found in any other part of the body; and I saw, a few months since, a young lady who was slowly dying, with a similar growth, which had commenced on one side of the neck, and had made its way behind the pharynx and œsophagus, displacing the trachea, and encroaching upon the cavity of the mouth, and in whom there was no evidence of disease in any other part of the body.

In the case of the child whose history I have given this evening, the disease seems to have been confined to one side of the neck for at least a year, and it seems to me probable that if I had had the opportunity of operating at an earlier period, the result might have been more satisfactory. For the improvement of the child's health after the removal of the diseased glands was most remarkable; and I wish particularly to point out that there was no recurrence of the disease in the posterior triangle of the neck, wherein the complete removal of the glands could be effected with much greater certainty than in the anterior triangle, owing to the presence in the latter of so many important structures; and I think it highly probable that some few diseased glands may have escaped my notice among the vessels at the upper part of the neck, where the growth first appeared. When we have to deal with so fatal a disease, it seems to me justifiable to undertake an operation even of considerable danger, when there is any reasonable chance thereby of eradicating or retarding it; and I think that in its early stages it would often be possible to remove all the glands affected by the disease, without incurring any graver risk than the nature of the case would seem to permit.

XIV.—*A Case of Vagabond's Discoloration simulating the Bronzed Skin of Addison's Disease.* By Edward Headlam Greenhow, M.D. *Read January* 14, 1876.

C. C., æt. 60, a scavenger by occupation, of dirty habits, swarming with pediculi both of head and body, and a hard drinker, was sent into the Middlesex Hospital under my care on Nov. 24, 1875, as a probable case of Addison's disease.

Previous History.—The man had been subject to rheumatism, but was not aware that he had ever had rheumatic

fever. He had been ailing for about a year previous to his admission, suffering especially from pain in the limbs and loins, which incapacitated him from work. He had had a cough for some months, and had occasionally spat blood and also vomited his food.

State on Admission.—A short man, about five feet four inches in height, of naturally dark complexion. Said he had lost flesh, and was very short of breath on exertion. Appetite unimpaired; bowels regular.

General surface of body of a dirty bronze hue, and skin rough; the epidermis, on being scratched, was raised in furfuraceous scales. The discoloration was deepest on the sides and back of the neck, in the axillæ, on the hips, loins, abdomen and chest; less marked on the face, hands, arms and lower extremities and on the sides of the trunk and back of the thorax; and, across the shoulders, a broad band, extending as low as the seventh dorsal vertebra, was comparatively free from discoloration. The areolæ round the nipples, and the penis and scrotum, especially the latter, were deeply pigmented and almost black. On the back of the neck were several small, irregular-shaped patches looking like cicatrices, but seen on examination with a lens to be normal skin. On the arms and hands were several mole-like specks of discoloration; the lips also presented some faint dark lines, and there were indications of light brown mottling on the mucous membrane of the cheeks.

The pulse varied from 52 to 70, and was intermittent. The heart's apex beat two and a half inches below, and two inches outside, the nipple; the area of cardiac dullness was greatly enlarged, and a distinct diastolic murmur was heard over the whole of the sternum as well as a faint systolic murmur at the apex of the heart. The breath-sounds were harsh, and crepitation was heard in the bases of both lungs. Patient's breathing became hurried and panting on his being made to walk across the ward.

Progress of Case.—For some time after his admission he suffered from cough attended by a scanty, opaque, mucopurulent expectoration, and on two or three occasions he vomited. A drop of blood taken from the thumb was found on microscopic examination to contain a considerable excess of white corpuscles. Whilst in the hospital he was well fed, had a good appetite and, after the first three or four days, had no return of sickness. He was made to take a succession of alkaline warm baths, and to use soap freely to the entire surface of the body whilst in the bath.

On Jan. 14, when he was examined previous to his discharge, the bronzed hue of the skin was still very pronounced all over the front of the body, though much paler than it had been at the time of his admission. The mammary areolæ and the abdomen were the darkest parts, except the penis and scrotum, which remained almost black. The white patches on the back of the neck had increased in size and number since his admission, and the pigmentation of the discoloured skin was clearly seen under a lens not to be uniform, but to consist of dark mottling of different shades of colour, interspersed with numerous white specks. The face, hands, legs and backs of shoulders had become almost, if not quite, of normal colour.

Remarks.—I am induced to exhibit this patient to the Society, because his case is one of a class in which the pigmentation of skin is not unfrequently mistaken for the peculiar discoloration of skin characteristic of Addison's disease. It is, however, exceedingly rare, in this country, to meet with cases of this class in which the discoloration of surface is so general and so deep as it was in this man at the time of his admission. I have seen many slighter examples of the same class, but have only met with one other equally striking case; which was that of a woman, aged 65, admitted into the Middlesex Hospital in 1863, and exhibited by me to the Pathological Society in 1864.* These cases are probably somewhat more common in Germany, for they have attracted sufficient attention there to have received the special name of 'Vogt's *Vagabonden-Krankheit*,' which I have rendered into English as 'Vagabond's Discoloration;' because this discoloration of skin, though usually, when brought under medical observation, associated with more or less of disease, is nevertheless in itself a mere superficial affection, brought on by long-continued exposure, dirty habits and the irritation of vermin.

In the patient now under observation, as well as in the woman above-mentioned, the skin became much paler under the use of alkaline warm baths and soap, and the surface left after the raising of a small blister was paler, instead of darker, than the surrounding parts. But, even before these crucial tests had been applied, it was easy to determine, from the rough furfuraceous surface and the mottled character of the pigmentation, that we had to do with a case of, as I have called it, Vagabond's Discoloration.

* Trans. Path. Soc. of London, vol. xv. p. 226.

The real difficulty of diagnosis lay in the fact that, co-existing with the general discoloration of skin, were some constitutional symptoms and local signs, which at first sight raised the question whether Addison's disease might not also be present. The feebleness, gasping respiration, and occasional vomiting were all symptoms which, if not otherwise accounted for, would be indicative of Addison's disease; and the slight discoloration of the lips and tongue, together with the very deep pigmentation of the mammary areolæ and of the penis and scrotum, seemed to lend support to the diagnosis of that disease.

I found, however, on examination, incompetence of the aortic and mitral valves, which fully accounted for the dyspnœa and other constitutional symptoms present, and I ascertained that other characteristic symptoms of Addison's disease, such as loss of appetite, constipation, &c., were altogether absent; and, therefore, having myself previously shown that no partial discoloration of skin can be relied on as diagnostic of Addison's disease in the absence of the characteristic constitutional conditions,* I was enabled to pronounce against the existence of that disease. I should add that the age of the patient weighed greatly in my opinion, from the first, against the *primâ facie* appearances in favour of Addison's disease; for, according to the statistics which I have collected,† Addison's disease very seldom occurs in persons past middle age; whereas Vagabond's Discoloration is usually met with in persons far advanced in life, and is often associated with various forms of senile decay.‡

XV.—*Thrombosis of the Cavernous Sinus; sudden loss of Vision; Hæmorrhage into the anterior Lobe.* By Thomas S. Dowse, M.D. *Read January* 14, 1876.

R. M., æt 23. Admitted into Central London Sick Asylum Nov. 5, 1874. Died Dec. 21, 1874. He was a fair-complexioned, strongly-built man, and until he met with the following accident had enjoyed robust health.

* Trans. Path. Soc. of London, vol. xxiv. p. 94.

† 'On Addison's Disease.' Croonian Lectures for 1875. Longmans & Co.

‡ This patient was discharged from the Hospital in January, and died in the workhouse some weeks later, from the effects of heart disease. At the *post-mortem* examination the supra-renal capsules, which are now in the museum of the Middlesex Hospital, were found to be quite healthy. July 18, 1876.

While walking home from Covent Garden some person unknown came suddenly in his rear and tripped him up, causing him to fall upon the back of the head. He was stunned for a few seconds, but recovered, and walked a distance of a quarter of a mile to his home without feeling giddy. There was no evidence of serious injury to the skull, no hæmorrhage from any part, and no vomiting. The following morning the scalp in the occipital region was much swollen, but he did not experience any severe pain in the head for two or three days, when it came on with great severity, and extended to every part. It was not continuous, for he would sometimes be free from pain for four-and-twenty hours, but any sudden movement of the head would bring it on in the most aggravated form, so that he was nearly beside himself. At times he suffered from feelings of faintness, and slight attacks of shivering, which continued for hours. And when this occurred he felt giddy and became very pale, but did not entirely lose consciousness.

These states of Petit Mal were preceded by strange tastes in the mouth (as he described it), like three or four unpleasant medicines mixed together.

On Nov. 1, four days previous to the time when he came under my care, his sight became cloudy, and in a few hours he was completely and (as it proved) permanently blind. When I first saw him there was nothing to be noted, either mentally or physically, save the total loss of vision. The other special senses were good, and both cranial and spinal nerves were normal. The pupils were dilated and the iris immovable. Upon ophthalmoscopic examination the condition known as ischæmia papillaris was noted. The discs were swollen, œdematous, and covered with small patches of extravasated blood. The veins were enlarged and tortuous. He continued in this state until Dec. 2, when he experienced a feeling of tightness in the right arm, as though some one had firm hold of it, and for a second or two his speech was affected, and he was unable to say what he wanted. These symptoms were only transitory, and did not return. He was put upon iodide of potassium with blue pill, but the want of sight continued.

On Dec. 6 he complained of pain in the head, similar to that from which he had previously suffered. His temperature rose to 104°, and his mind became confused. Unfortunately at this time he was attacked with diffuse erysipelas of the scalp and parotid glands, which marred the

especial clinical characteristics of the hæmorrhage into the anterior lobe. But on the day previous to his death I made the following note:—'Is lying on his back in a state of partial coma, the lower limbs are devoid of voluntary, automatic, or reflex movements; the upper limbs are moved automatically. There is subjective but not objective cerebral consciousness, as evidenced by wandering delirium. There are no convulsive movements or muscular rigidity, showing pretty clearly that his condition is not due to hæmorrhage over the convolutions; neither does it appear probable that thrombosis alone is the cause of the coma.'

Thus we find a condition of sub-consciousness, cutaneous anæsthesia, muscular æsthesia, akinesis of lower and automatic movements of upper limbs. Pulse 160; temp. 104·2°. On the following day he died.

Post-mortem.—Twenty-four hours after death. Cadaveric rigidity marked. Upon cutting through the scalp it was found to be universally thickened, the thickness extending to $\frac{3}{8}$ of an inch, and so adherent to the pericranium that its removal was effected with difficulty. The skull was examined for fracture, but no mark of such an injury existed. The dura mater was not especially hyper-vascular; the arachnoid membrane was remarkable for its dryness and absence of fluid. The vessels of the pia mater were engorged with dark blood. There were no adhesions between the membranes, or signs of chronic inflammation. The superior longitudinal and lateral sinuses were free from thrombi, but there was a roughness upon the inner wall of the latter which gave one the impression that it had been the seat of some fibrous deposit. Both of the cavernous sinuses were almost completely occluded with fibroid masses adherent to their walls. In reference to the venous blood-channels it might be stated that the veins of Galen were free from blood, and the arachnoid membrane here presented the same characteristics as that over the cerebral convolutions.

When the central ganglia were exposed they were found to be healthy, but in the substance of the right anterior lobe there was seen to be considerable hæmorrhage of recent date, not localized, but distributed freely through it. At the outer part it was punctiform, but towards the anterior fissure in relation to the gyrus erectus was a clot of dark blood about the size of an acorn, gradually shading off into smaller masses. The posterior part of this lobe in relation with the corpus callosum, anterior pillars of the fornix, and septum

lucidum, presented an abnormal appearance simulating a sarcomatous outgrowth, bilateral in outline and involving the left lateral ventricle.

When the base was exposed there was what appeared to be an outgrowth of cerebral substance, about the size of a cherry, at the posterior part of the right olfactory convolution. Upon cutting into it, it presented marked hyper-vascularity, and was in immediate relation with the hæmorrhagic clot before described. The arteries were healthy, as well as those parts forming the floor of the fourth ventricle. The optic tract and chiasma were of normal consistence, as also the other cranial nerves. The crura, pons, corpora quadrigemina, geniculate bodies, and floor of the fourth ventricle, were apparently healthy.

LIBRARY

I am indebted to the Microscopical Society for details of microscopic appearances of brain and optic nerves.

'The pyramidal cells of the cortex of the brain were cloudy, and in many places exhibited a granular appearance. Molecular disintegration, however, was not in a very advanced stage. The medullary white matter was very granular, and infiltrated with large numbers of small nucleated elements varying in size from the $\frac{1}{2000}$ to $\frac{1}{2500}$th of an inch in diameter. The nuclei here and there were either in a state of division or undergoing that process of multiplication. These cells were very numerous around the blood-vessels, which appeared to be foci for these elements. The blood-vessels were distended with blood corpuscles, the peri-vascular spaces being completely filled with the engorged vessels.

'The optic nerves were alike in appearance. The connective tissue septi appeared to be thicker than natural, and contained an increased number of connective tissue corpuscles. The whole of the elements of the nerves had the appearance of having been separated by an exudation. The vessels were slightly thickened, apparently from the same cause, and surrounded by corpuscular elements corresponding to those already described in the cerebrum.'

It is interesting to note, in reference to the plugging of the cerebral sinuses, how little we have to guide us in making a diagnosis as to the existence of this lesion. And from examinations which I have made I am led to believe that thrombosis of these blood-channels is of more frequent occurrence than is usually supposed. It becomes a question how far this circulation can be interfered with, and yet the brain retain its physical and psychical characteristics.

It seems probable that in the case just narrated thrombosis of some of the sinuses took place shortly after the accident, and gave rise to the intermittent attacks of pain. That the sudden loss of vision, with hæmorrhagic infarcta into the retina, was caused by the plugging of the cavernous sinuses, seems more than probable. And, again, the hæmorrhage into the anterior lobe might be ascribed to the same cause; the vessels from the anterior cerebral vein having given way in consequence of the impediment to the flow of blood into the sinus. Hæmorrhage into the anterior lobe is of rare occurrence, and its diagnosis more difficult perhaps than that of any other brain lesion (Gentrai found that in a total of 751 cases of hæmorrhage within the cranium it occurred only in 17), and helps to bear out Professor Ferrier's experiments as to the entire absence of motor action in this region.

XVI.—*A Case of Congenital Fatty Tumour.* By E. Venning. *Read January* 14, 1876.

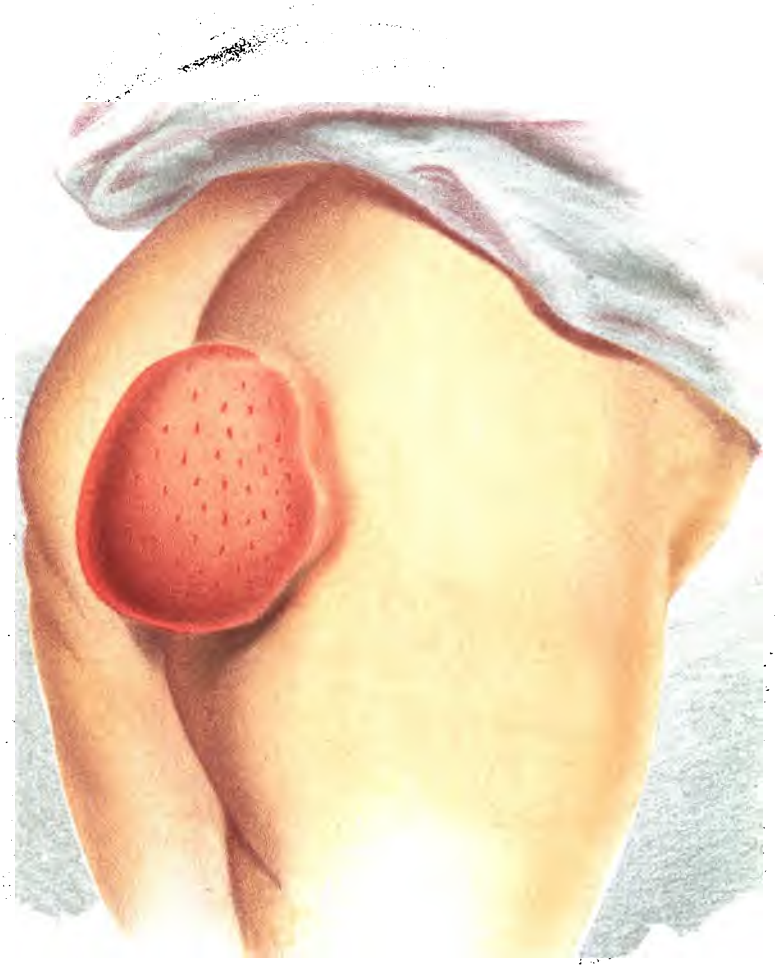
I AM induced to bring the following case to the notice of the Society—first, on account of the difficulty it presented in arriving at a correct diagnosis as to its nature; and secondly, on account of its rarity in a congenital form. C. E. G., a male child, æt. 8½ months, was brought to me in July last, having a tumour which was situated on the right buttock, rather to its inner side. The history given by the mother was as follows:—At the time of the child's birth she noticed a small lump about the size of a pigeon's-egg situated on the right buttock. Its surface was very red, and she remarked that it began to increase in size when the child was two months old.

At the age of four months, as the tumour was still increasing, she took the child to the Middlesex Hospital, and attended with it as an out-patient. Some discutient ointment was applied, and she was advised to come into the hospital with the child, in order that proper steps might be taken towards removing the growth, but this she was unwilling to do.

When I first saw the case, which was about the middle of July last, the tumour was of the size of a Mandarin orange

Its surface was of a deep red colour (which is faithfully shown in the accompanying sketch, which was made for me by Dr. Westmacott). (See Plate 2.) It was elastic to the touch, and became much more tense when the child cried. There was no impulse, and it had no connection with the rectum. It gave the impression of being deeply seated amongst the gluteal muscles, and felt very like a large nævoid growth. In fact, I felt pretty confident that it was such I had to deal with; but as its size was so great, I asked Mr. Holmes to see the case with me in consultation ere I undertook any operative measures. This he very kindly did, and after examining it carefully arrived at the same conclusion as I had, that it was nævoid in character, and suggested that I should divide the tumour into three portions by passing two strong ligatures beneath its base, and tying them tightly over the growth, and then to deal with each separate portion as circumstances might suggest. This plan of treatment I carried out. The child having been placed under the influence of chloroform by my friend Mr. Morgan, stout silken ligatures were used and tied as tightly as possible, but it was only after two applications of the ligatures that I was able to destroy the skin on the upper surface of the tumour. About the middle of August the tumour was fairly divided into three portions, and they seemed to be contracting rapidly, so that I had every hope that the growth of the disease was arrested, and that the remaining portions would not give much trouble. At the time the child was somewhat reduced in strength, and was taken to Brighton for some weeks.

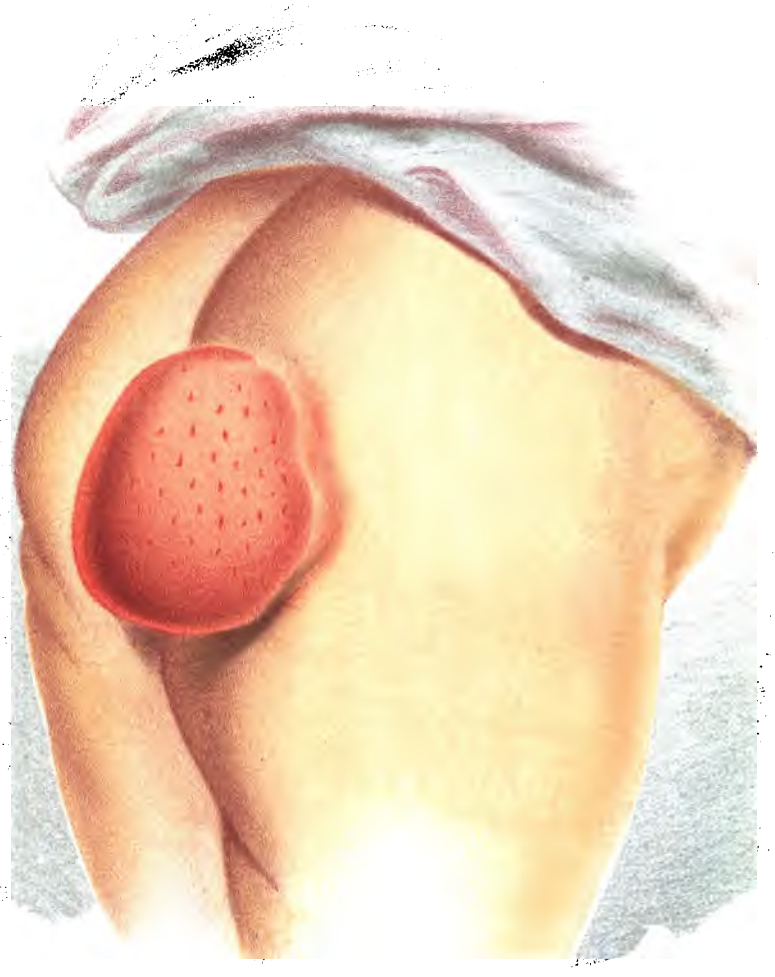
On Sept. 15 it was again brought to me, and to my astonishment, instead of the tumour being much diminished, it had grown most rapidly, and was now as large as a moderate-sized orange. The skin over its surface presented the scars where the ligatures had cut through the growth. These were much stretched by its increase, and it was of a deep red colour. The tumour was elastic, and became considerably distended when the child cried. As the disease was increasing so rapidly, it became necessary that some operative measures should be undertaken without delay. I still believed it to be nævoid in character, and proposed to myself the removal of the disease by the knife, cutting through only healthy structures; but as this was a very formidable undertaking in so small a child, I asked Mr. Holmes to see the case with me again, and having gone most carefully into the facts, he



J.Westmacott del. R.Mintern lith. Mintern Bros. imp.

Mr Vennings case of Congenital Tumour.

See Page 52.



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M.r Vennings case of Congenital Tumour.

See Page 52.

agreed with me that whatever was the nature of the tumour (which was very doubtful), extirpation should be attempted.

The consent of the parents having been obtained for the removal of the growth, ether was administered by Mr. Morgan, and Mr. Holmes very kindly gave me his valuable assistance. I had made every preparation for arresting hæmorrhage, which I expected would be profuse. Ere I commenced the operation I punctured the tumour with a grooved needle, and scarce a drop of blood escaped. I then proceeded to remove the growth by making an incision around its base, taking care to cut into sound tissue only, I was agreeably surprised to find that the tumour turned out easily, with the loss of the smallest quantity of blood possible, only three small vessels requiring a ligature. The edges of the wound (which was a formidable one) were brought together with deep wire sutures, and it has since healed perfectly, and the child is quite well.

On examining the growth after removal, it was found to consist of very fine fat, very like fœtal fat, and differing considerably from the usual appearance of a fatty tumour occurring in adults. The microscope showed that it was made up of fat cells, enclosed in a delicate fibrous stroma.

Remarks.—As I mentioned at the commencement of this Paper, the interest of the case lies—first, in the difficulty there was in arriving at a correct diagnosis of its nature. It certainly had very many of the characteristics of a deeply connected nævus, and I do not know by what means we could have come to a different conclusion. The vascular appearance of the tumour, its increase in size when the child cried, and the fact of its being congenital, all tended to confirm the belief that it was nævoid in character, and hence the plan of treatment I adopted at first.

Mr. Thomas Smith, in his Paper on congenital cystic tumours, in the second volume of the 'St. Bartholomew's Hospital Reports,' mentions the fact that at times it is difficult to distinguish the congenital cystic growths from subcutaneous nævi, both on account of their general character, and the venous staining of the skin which not unfrequently exists, whilst the resemblance may be much increased by the swelling up and turgescense of the growth when the child screams or struggles. Such was the appearance in my case.

Secondly, there is the rarity of tumours of this nature in a congenital form; though Chelius, in his work on surgery,

says that 'adipose tumours are not unfrequently congenital.' On looking over the 'Pathological Transactions,' I can find only three cases of congenital fatty tumour recorded. One is the well known case which occurred in Mr. Gay's practice, and reported in the fourteenth volume, in which he removed the foot on account of what at the time was believed to be a malignant growth, but which, on dissection afterwards, proved to be a congenital fatty tumour only. In his case the skin over the tumour was of a dusky purple colour.

The second case is reported by Mr. Thomas Smith, in the twenty-first volume. It was under the care of Dr. Wilson, of Clay Cross, and simulated spina bifida. The sense of fluctuation was so marked that it was punctured in four spots before Dr. Wilson could be convinced that it was solid. It was removed, and found to consist of whitish fœtal fat, and differing considerably both in colour and consistence from the ordinary adipose tumour of adults.

The third case is reported by Mr. Athol Johnstone, in the eighth volume of the 'Transactions.' It occurred in a male child, aged 10 months, and was situated in the sacral canal, and adhered to the membranes enveloping the spinal cord. He removed the tumour, and the child recovered perfectly from the operation. Mr. Johnstone remarks on the infrequency of fatty tumours in very early life. He thought it probable that the one he had removed was congenital.

Some years ago I was present when Mr. Pollock removed, at St. George's Hospital, from the lower part of the back of a child between five and seven years old, a fatty tumour, weighing twelve pounds. It had been diagnosed as a case of spina bifida, and was therefore probably congenital.

In the museum at St. George's Hospital are two specimens of portions of a foot which were removed by the late Mr. Tamplin, on account of a large fatty tumour involving the second and third toes. The patient from whom the tumour was taken was ten years of age at the time of the operation. She was first seen by Mr. Tamplin when only two or three months old. The toes were at that time enlarged, but not sufficiently to warrant any treatment. This was evidently congenital.

Seeing, then, that these cases are at times difficult to diagnose, and also somewhat rare, I trust it will not be considered that the time of the Society has been wasted by my bringing my case under its notice.

XVII.—*Observations on Cataract Extraction, with Cases illustrating the Author's Method.* By CHARLES BELL TAYLOR, M.D. *Read January* 28, 1876. *Communicated by* R. B. CARTER.

EARLY in the year 1865 Dr. Schufte, at that time Professor Von Graefe's assistant, proposed to scoop out senile cataracts with a spoon; to accomplish this, through a small incision, he excised a portion of iris. It struck me that if we consented to sacrifice the iris that the same end might be obtained without the spoon, provided only that Schufte's incision were slightly enlarged; and in the summer of the same year I extracted several cataracts in this way, publishing an account of the procedure in the ninth number of the 'Ophthalmic Review,' before Von Graefe's celebrated operation, which is very similar, had been introduced into this country. The mutilation of the pupil, however, always appeared to me most objectionable, and in the hope of saving the sphincter of the iris, and yet securing the advantages of an iridectomy, I operated upon several patients, excising only the periphery of that membrane, leaving the pupil untouched and free in the anterior chamber. This operation gave good results, but was so tedious and difficult that I came to adopt the method to which I desire to direct your attention this evening.

The operation in question is essentially a flap, the base of which, instead of corresponding, as in Daviell's method, to the horizontal diameter of the cornea, and comprising one-half of that membrane, occupies a position about midway between that line and the corneo-sclerotic junction. The free edge of this small flap lies in the vascular limbus corneæ; hence being near to materials for repair, the wound heals readily, the danger of suppuration is slight, and there is no subsequent astigmatism from altered curvature of the cornea, such as so frequently mars the result when transverse corneal incisions have been adopted. As the pupil is untouched, and no trace of the wound is to be seen a week or two after the operation, there is no special reason why we should make the incision upwards; and in view of the much greater facility with which the lower section is accomplished, and the much greater ease with which the lens is extruded downwards, I have preferred to make it in this direction. If, after extraction of the lens,

the iris should prolapse, it may be readily replaced, and the tendency to protrude combated by myostic agents. The incision may be made either by a ground-down cataract knife, a bent iridectomy knife, or Von Graefe's knife, the last being the one I usually employ. It has been said, 'that the recommendations with which every author accompanies the account of his method are more or less subjective impressions;' and this is no doubt true. In fact, an immense number of cases require to be investigated and recorded by some one other than the operator himself, in order to be able to arrive at a correct impression as to the results obtainable by any method. All I can say is, that the cases you will see to-night are fair samples of numbers of others operated upon by myself in a similar fashion. Clearly the best method of extraction is the one which gives the least number of lost eyes and the highest amount of usual acuity; but, in fact, I do not think that these ends are to be obtained by any one operation; to secure them we must select our cases and perform iridectomy in a certain proportion, either as a preliminary measure or at the time of the operation. When a patient is suffering from senile marasmus or marked premature decay, when the eyeballs are sunken softer than natural, the corneal diameter small, and the skin thin, silky, and wrinkled; if the cataract be immature, or if the case present any other marked sinister complication, it is well to guard against disaster by excising a small portion of iris; in this way we shall secure the least number of lost eyes. In all other cases it appears to me that the operation I have described is the best, and it is certainly one by which the most favourable results to which we can aspire are obtained.

Mrs. C., æt. 67, of Sutton-on-Trent, a patient who, after blindness of six years' duration, had undergone double extraction at one sitting and recovered excellent sight, with central and movable pupils, was then introduced; as was also James B., of Derby, æt. 75, who had been similarly treated with a like result.

XVIII.—*Observations on the Operation for Symblepharon, with a case illustrating a new method of treating this affection.* By CHARLES BELL TAYLOR, M.D. *Read January* 28, 1876. *Communicated by* R. B. CARTER.

PATIENTS whose eyelids adhere to the eyeballs are said to suffer from symblepharon. This condition is usually caused by injuries such as the impact of red-hot metal, quicklime, or strong acids. These agents occasion sloughing and ulceration of the palpebral and ocular conjunctiva, and when the wound heals the two opposed surfaces unite. After a time the lid may be dissected from the globe; but the problem is how to prevent the cut surfaces from re-uniting. In order to do this I dissect off a thin strip of skin from the upper or lower eyelid, draw back the flap thus formed, and then perforate the tarsus with a transverse slit at the base of the incision. Through the aperture thus formed the flap is passed inwards, and its raw surface brought in contact with the lid or eyeball denuded of conjunctiva; it is then stitched *in situ*. The small flap is readily spared from the upper lid. The wound, when healed, looks like a natural fold of skin. The lids are as readily closed as before the operation, and, in fact, as you will see, the operation leaves no trace.

CASE.

John W., æt. 20, of Sessop Street, Codnor Park, came under my care in December 1874. At that time he was suffering from symblepharon, affecting the left eye, and occasioned by the impact of some molten metal six months previously. The lower lid was firmly adherent to the eyeball as high up as the horizontal diameter of the cornea, and the conjunctiva was destroyed to so great an extent as to frustrate two efforts which I made to free the eyeball by the transplantation of this membrane. I therefore determined to supplement the lost tissue by a piece of skin borrowed from the upper lid, and accordingly dissected off a strip an inch and a half in length and about half an inch in width, passed it through an aperture made in the tarsal cartilage, and brought its raw surface in contact with the lower surface of the previously-separated eyeball. In ten days the free extremity was firmly attached in its new

situation, and I then divided the base and fixed it with sutures as low down as possible in the retro-tarsal fold. As a result the eyeball remained perfectly free, the cuticle dwindled and came very much to resemble the mucous membrane with which it was in contact, and no scar was perceptible on the site from whence it was taken.

XIX.—*A Case of Gunshot Wound of the Upper Arm, dividing the Brachial Artery and Median Nerve.*

By CHRISTOPHER HEATH. *Read January* 28, 1876.

J. W., æt. 19, a labourer, was dragging a gun loaded with small shot through a hedge, when a twig caught the hammer, discharging the gun, and sending the charge through the right upper arm. There was profuse bleeding, which was stopped by his friends tying a handkerchief round his arm above the wounds. The patient felt very faint and giddy; after lying down for some time, and taking some brandy, he was brought to University College Hospital.

Aug. 8.—On admission, four hours after the injury, he was found to have two lacerated wounds in the right arm, about 4 inches above the elbow. One on the inner side of the arm was 1 inch in diameter, with sharp cut edges; the other on the back of the arm 3½ inches long and 2½ inches wide, with very ragged edges; in this the triceps was exposed, lacerated, and contused. Between the two wounds there was a track under the skin about 2 inches wide, this was found to be quite free from shots or other foreign bodies. Bone uninjured. No hæmorrhage. No pulse could be felt in the limb below the seat of injury. The arm was cold. Sensation of the hand imperfect; no difference was at this time discovered between the fingers. None of the fingers nor thumb can be placed quite on the palm, but flexion of the wrist is perfect. Extension of the wrist, thumb and index finger is almost perfect, but there is scarcely any power of extending the other three fingers. Pronation and supination are slightly impaired.

In Mr. Heath's absence, Mr. Erichsen saw the patient, and ordered a piece of lint dipped in carbolic lotion to be applied to the part.

Aug. 9.—Hand is warm, but the pulse cannot be felt below middle of arm. There is considerable swelling of

the whole arm. Occasional shooting pain into the palm of the hand, and he complains of a sensation of numbness in the fingers.

Aug. 10.—The wounds are syringed with carbolic lotion every 4 hours, and an oakum poultice is kept applied. The fore-arm is supported in a leather sling splint. Temp. 99·4°.

Aug. 11.—The swelling of the arm is much less, and is limited to the inner part of the arm above the elbow. The skin round the two wounds is reddened, and also over the track of the shots, but does not show any sign of sloughing. The muscles protrude at both wounds, especially at the larger one. Pulsation is distinctly felt in all the radial, ulnar, and radial recurrent arteries, but not in the brachial above the elbow.

Aug. 12.—Patient had a sharp attack of diarrhœa, for which he is ordered opium. There is a good deal of hardness in the lacerated triceps muscle. Temp. 98·6°; pulse 112.

Aug. 13.—The sensation of the hand carefully examined. There is absolutely no sensibility in the three inner fingers, and it is doubtful whether he feels anything in the index finger; slight sensibility of upper part of thumb. In the palm and dorsum of the hand there is slight sensation, which diminishes gradually towards the ulnar side.

Aug. 17.—The lacerated part of the triceps muscle is sloughing to a considerable extent. There is œdema of the back of the hand. The power of extending the fingers is increased.

Aug. 18.—Both wounds are granulating healthily. A prick on the palmar surface of little and ulnar side of ring fingers causes a painful sensation of pins and needles. In other respects sensation is unaltered. Rubbing the fingers causes a burning sensation in them. Temp. 98·6°.

Sept. 2.—Patient is up all day; feels quite well. Since last note there has been no change noticed in the sensation or mobility of the hand. The wounds are now quite superficial granulating sores, dressed with lotio rubra and an oakum pad. This morning the ring and middle fingers are found to be cold; the other digits are not quite so warm as the other hand. The power of extension of fingers has improved; flexion remains in *statu quo.*

Sept. 8.—Over dorsum of hand and thumb, and fourth and fifth digits, sensation is perfect. Does not feel the prick of a pin at all on the back of second and third digits, nor on the balls

of these fingers. Feels the prick distinctly on ball of little finger and ulnar side of ring finger, but on the radial side of this finger and on thumb he describes the sensation of a pad between the pin and the skin. Second and third digits cold. To have passive motion applied to the elbow and wrist-joints every day.

Sept. 24.—The wounds in the arm have entirely healed. There is slight inability to extend the elbow completely. Flexion of this joint and the movements of wrist are perfect. Flexion of the fingers is very imperfect; extension is improved, but still imperfect. The coldness and insensibility of the index and middle fingers continues as before. Discharged from the hospital to-day.

The patient was exhibited to the Society. This patient's arm furnished excellent examples of the classical 'aperture of entry and aperture of exit' immediately after the accident, and the entry of the charge was much smaller than the exit, and the inversion and eversion of the edges were well marked. It is remarkable that though the charge of shot (1½ oz. No. 6) must have contained upwards of 400 pellets, yet not a single shot was found in the wounds.

The brachial artery, and probably the median and internal cutaneous nerves, were divided, and the ulnar and musculo-spiral nerves injured by the charge. The median nerve remains completely paralysed, but the ulnar has been partially repaired, judging by the improvement in the sensation of the little and ring fingers. Extension of the wrist and of the thumb and index finger, but not of the other finger, was possible from the first; and this would seem to show, while some part of the musculo-spiral and posterior interoseous nerve had escaped, other branches of the posterior interoseous and radial nerve had suffered. Flexion of the hand and fingers is wanting, and so also the power of approximating the fingers. When told to *flex* the hand, the patient makes an effort which results in *extension*. It is quite certain, however, that for a few days after the accident the patient possessed the power of flexing his wrist and his fingers in part, and was supposed to have escaped with less injury than now appears to be the case. This seems to have been due to the flexor carpi ulnaris and flexor profundus digitorum supplied by the ulnar nerve.

Dr. Poore examined the electrical condition of the arm, and found that the flexors of the right fore-arm cannot be made to respond to the strongest induction (Faradic) cur-

rents, but they can be readily made to contract by a slowly interrupted galvanic current of moderate intensity.

Report on the Condition of James West's right hand and arm. By Dr. Poore. *Feb.* 6, 1876.

Wasting of fore-arm remains in *statu quo*, or possibly is a little increased.

There is wasting of ball of thumb, of first dorsal interosseous muscle, and of the other interossei. The abductor minimi digiti is not so much wasted as are the interossei.

Sensation along inner side of fore-arm, though still impaired, has improved. The sensation along radial side of ring finger, and both sides of middle finger, is still slightly impaired, although very much improved. There is complete anæsthesia along radial border of index finger, and marked impairment of sensation along ulnar border. Power of flexing fingers is about the same as at last report. Power of grasp, as measured with dynamometer = 0. Cannot flex index finger, and has very little, if any, control over 'median' muscles of thumb, except the flexor longus, which moves the ungual phalanx slightly.

The flexors of fore-arm respond readily to the *galvanic*, but not at all to the strongest *faradic* current.

The ulnar muscles of hand respond to faradism; the abductor and short flexor of little finger readily; the third and fourth dorsal interossei not quite so readily, and the first and second dorsal interossei the least readily.

XX.—*Case of Embolism of the Right Posterior Cerebral Artery, with Yellow Softening of the Occipital Lobe of the Hemisphere, producing Temporary Blindness, left Hemiplegia, uncontrollable Movements of Right Limbs, and rolling tendency; Double Optic Neuritis.* By W. H. Broadbent, M.D. *Read January* 28, 1876.

Geo. C., æt. 19, footman, was admitted into St. Mary's Hospital Nov. 1, 1872.

He had had acute rheumatism three years previously, and had suffered since from shortness of breath and palpitation

of the heart, but had been able to do his work, though considered delicate.

He had complained of headache for about three weeks, when ten days before his admission he went out in the evening to call a cab; he did not find one at once, and on returning said he could not see, and complained of great pain in the head. He went to bed, and his sight, which had been completely lost, returned; when, exactly, was not ascertained; but it was before the accession of the symptoms for which he was admitted, and these came on five days after the first attack.

When first seen he was tossing restlessly about, taking little notice of anything. The right limbs were in constant and violent action; the left limbs, on the other hand, were quiet, rarely moving, and paralyzed to a considerable degree; the arm rigid, the fore-arm pronated, and the thumb in the palm; the leg also rather rigid. There was a great tendency to roll over to the left; before his admission he had repeatedly rolled out of bed, and was covered with bruises in consequence; he had had to be held in bed, and still required to be restrained. He said he could not control these movements, and complained when they were restrained. Sensation was impaired in the left limbs.

Though taking no notice voluntarily, he put out the tongue when asked; gave his age, the date of the rheumatic fever, the facts of the present attack, and said he had pain. Answers short, and elicited with a little trouble.

Pulse variable, 120-160, or more; temp., right axilla, 99·2°; left, 100·6° (a difference of more than a degree). Bowels not open.

A loud systolic mitral murmur heard on auscultating the heart.

The patient was put on a diet of milk and beef-tea, with 4 ounces of brandy. Calomel, 3 grains, was given immediately; and carbonate of ammonia, 2 grains, with 3 drachms of infusion of digitalis every three hours; a chloral draught ordered at night.

Nov. 2.—Night pretty quiet; bowels open; urine and fæces passed in bed.

Lying on back; very pale; apparently unconscious, but after some urging put out the tongue, which was dryish and brown; answered questions when roused up; much more easily roused than on the previous day.

Right limbs in continual motion; left quiet and rigid as before.

Ophthalmoscopic examination impracticable, but an occasional glimpse of the discs showed them to be apparently red and vascular, and the retinal veins to be large and dark.

3.—Quiet night; takes drink very well. Arm quiet during sleep. Left limbs motionless, but moved when urged, and especially if pinched frequently and freely. Movements in right limbs. Rolls over to the left, but is more quiet when not disturbed.

Is conscious of the discomfort caused by the urine passed in bed, and asks to pass water.

Pulse 150. Mitral systolic murmur as before. Optic discs not well seen; apparently ill-defined and vascular, and the retinal veins tortuous.

The calomel repeated; the ammonia and digitalis given every four hours; the brandy increased to 6 ounces.

4.—Slept all night, and quiet during sleep. Asks for bed-pan when bowels opened; urine sometimes in bed, sometimes in vessel.

Much less motion of right limbs; left not in motion, but can be moved at will feebly; sensation in them greatly impaired.

Takes more notice; calls for nurse, asks for drink: 'Milk or anything.' Knows where he is, and asks if the physician is his mistress's doctor.

The optic discs well seen, the patient co-operating. In both an appearance of elevation; discs longer in vertical diameter, margin ill-defined, unduly vascular, and having a woolly appearance; the retinal veins large, dark, tortuous, and showing a marked curve in passing from the disc to the retina; retinal arteries visible but small. The two eyes in similar condition, which is that of marked optic ischæmia or neuritis.

Pulse 108, strikingly dicrotous, soft and short.

5.—Found asleep lying on back; face flushed; roused with a little difficulty, but then answered rationally. Had been restless in night. Bowels not open; very thirsty; no sickness. Pulse 88, fuller, dicrotous. Temp: right, 99·2°; left, 100°. Ophthalmoscopic appearances as on 4th. Slight paralysis of left external rectus observed.

Remarks.—As the case is long it may be well here to interrupt the record, and note the conclusions which had been reached at this period.

The age of the patient, the history of a previous rheumatic fever, the existence of a cardiac murmur, and the circumstances of the attack, pointed clearly to embolism of a cerebral artery as the cause of the symptoms observed. The blindness which was among the first of these seemed to indicate that the retinal arteries, or the main arteries supplying them, were blocked, but the loss of sight was temporary only. The striking features of the case when the patient came under observation were the partial paralysis, motor and sensory, of the left limbs, with slight rigidity; the incessant movement of the right limbs, and the tendency to roll over towards the left. It appeared to me that these might be explained by embolism of the right posterior cerebral artery. It has been given as one of the characters of cerebral embolism that sensation is not affected. This, however, has probably arisen from the fact that the artery most commonly blocked up, the middle cerebral, supplies chiefly the motor area of the brain, and there is no reason why sensation should not suffer if the sensory area is deprived of blood. The posterior cerebral artery supplying in part the thalamus and sensory tract, obstruction in it would account for impaired sensation. At the same time it appeared probable that the increased pressure in the other branches of the basilar, especially those of the opposite side, and the consequent derangement of the circulation in the parts supplied, might explain the uncontrollable impulse to move the right limbs, and the tendency to roll over associated therewith. Interference with the circulation in the thalami and neighbourhood in which the optic tracts end, again, would account for the temporary blindness. A very unusual fact in the case was the occurrence of optic ischæmia in association with embolism.

There was rapid improvement. On the 13th pain was complained of across the forehead; but he was recovering power and sensation in the left limbs, while the right limbs were quiet; paralysis of left external rectus still observed. His answers to questions were a little slow, but distinct and perfectly rational, and his memory was good. While, however, he was apparently quite sensible, free from excitement, or delusion, or delirium, he not only passed his urine and fæces in bed, but the latter were thrown about, and there was absolute indifference to the filthy state of the hands and bedclothes.

Optic ischæmia as bad as ever; vision good.

Temperature in right axilla, 99·3°, in left, 100°; and it

should be noted that the temperature up to this time had been nearly a degree higher on the left side than on the right.

16.—Urine was obtained: alkaline; sp. gr. 1016; no albumen. Condition generally better. Sensation returning in left side, but transmission or recognition of impressions slow. Tinct. ferri muriatis ♏xv, and infus. digitalis ℥ss now given. Solid food taken since 11th.

20.—Very much better. Urine and fæces passed naturally.

23.—Sits up after dinner.

Dec. 7.—Up and walking about the ward; eats and drinks well, but very pale, and suffers a little from headache. Left limbs weak, and sensation not quite perfect. Paralysis of left external rectus scarcely perceptible. Pupils large. Optic neuritis subsiding somewhat; distant vision good; can read a little, but not small print.

Heart's action regular; apex not in natural situation; loud systolic murmur at and near apex; pulse regular and good. All this time the temperature had never been below 99°, and was generally about 100°; there was now no appreciable difference of temperature between the two axillæ.

The patient was apparently well enough at this time to have left the hospital, but for the persistently high temperature. He was very pale, however, and had a somewhat vacant, or rather, abstracted look.

11.—Pain in left side, apparently in spleen, which was found to be large and tender on pressure through or under ribs (splenic embolism). Pulse, 102; temp. 100·1°.

18.—An ophthalmoscopic observation of this date may be recorded. Outline of optic discs becoming more perceptible; appearance smoother, still red and rather prominent. Retinal veins large and tortuous; arteries visible. Can read, but not long at a time.

Towards the end of December he became worse, and symptoms appeared, more especially a troublesome cough, which were attributed at first to acute tuberculosis, but were soon recognised as due to ulcerative endocarditis. The further progress of the case will be described in a separate communication to the Society, together with other cases of ulcerative endocarditis. The only new cerebral symptoms were convulsions on Feb. 9. He had got up to breakfast on this day, but had gone to bed again; in the evening he had between 5 and 9 P.M. eight or more fits, in which he was unconscious, with stertorous breathing, frothing at the mouth, and synchronous jerking of all the limbs. During the

following night he had vomiting and purging, and next day slept in a half-unconscious way; did not like to be disturbed, and did not know where he was. He was exceedingly pale, and had a distressed aspect.

He died on March 5. The post-mortem appearances were as follows:—

When the dura mater was removed a little extra roughness was observed along the margins of the great longitudinal fissure, slight opacity of arachnoid, and some opalescent fluid along the sulci. The surface of the hemispheres was anæmic, but there were numerous superficial red stains, varying in size from a pin's head to a threepenny-piece, due to embolisms of minute arteries. There was a large amount of transparent fluid at the base of the brain. The occipital lobe of the right hemisphere was soft, baggy, and shrunken, and a yellow stain was seen on its lateral aspect, near the lower border, involving chiefly the third occipital gyrus.

The Sylvian, anterior and posterior cerebral, basilar, and cerebellar arteries, were free from embolism, except the calcarine branch of the right posterior cerebral within the fissure.

The brain substance generally was firm and anæmic. There was much fluid in the ventricles, which were greatly distended, and the fornix was softened, no doubt as a consequence of the effusion into the ventricles. A small hæmorrhagic (embolic) patch was seen in the anterior part of the velum interpositum.

The right occipital lobe had undergone yellow softening. As has been mentioned, it was seen to be shrunken, and it felt soft and baggy before section; there was also a yellow stain on its outer aspect. When cut into no abnormal appearance was present in that part of the lobe above the level of the posterior cornu of the lateral ventricle; but when this cornu, which was greatly distended, was opened, its lining membrane was seen to be stained yellow throughout, but it was unbroken and not at all softened. The brain substance to the outer side of the cornu and below it, was soft, yellow, and wasted; there being, in fact, little substance of any kind left between the cornu and the pia mater, while a cavity, the walls of which were stained of a deep ochre-yellow colour, existed in the situation of the hippocampus minor, which corresponds with the bottom of the calcarine fissure. The softening extended from the descending cornu of the lateral ventricle to the tip of the lobe, and involved the tail of the

corpus striatum and the fibres of the thalamus passing to the occipital lobe.

The posterior cerebral artery presented no abnormal appearance outside the calcarine fissure, but when the attempt was made to follow the branch which enters it, the pia mater of the two sides of the fissure and all the structures were found to be so matted together that the vessel could not be distinguished. Accordingly no embolic plugging of the artery was demonstrated. The character of the softening, however, was clearly such as is caused by embolism.

In the heart was found extensive ulcerative endocarditis. In the spleen two large embolic masses; in the liver and kidneys smaller patches; while the skin was everywhere dotted with petechiæ of similar origin. The lungs were much congested.

I have already commented on the prominent points in the case, but the peculiarities it presented may warrant a few further remarks. It was obvious that the attack was due to embolism of a cerebral artery, and the difference in the symptoms, as compared with those usually observed in cerebral embolism, were just such as might be explained by interference with the circulation in the posterior instead of the central part of the hemisphere. The severity of the attack, however, led me to conclude that at least the posterior cerebral artery was obstructed, whereas only a single moderate-sized branch was found closed after death. But I am still of opinion that a larger vessel was originally plugged, perhaps even the right division of the basilar. There was at first temporary blindness, then incomplete left hemiplegia, sensory and motor (predominantly sensory), with slight rigidity, and with this, incessant and uncontrollable movements of the right limbs, and a tendency to roll over and over towards the left, and also considerable oppression of the intellectual faculties. I do not consider obstruction of the calcarine artery alone adequate to account for all this, making the fullest allowance for tumefaction in the vascular area involved, and the increased pressure in neighbouring arteries. Again the rapid improvement and complete recovery from the hemiplegia appeared to indicate that at first there was obstruction to the circulation in a much larger portion of the brain than was ultimately softened. Had obstruction of the calcarine artery given rise to the hemiplegia, softening of the part supplied by it would have rendered the paralysis permanent. The cause of the hemiplegia was

clearly temporary. It is possible, finally, that the free communication between the posterior and superior cerebellar arteries might not only serve for collateral circulation when the former was blocked up, but might also dislodge the plug.

Before concluding, I would again call attention to the interesting psychological fact that when the intelligence was so far restored that no deficiency of comprehension, or memory, or reasoning powers was evident, the patient was so indifferent to common decency as to throw about his fæces and daub his hands and bedclothes with them. I may also again note the association of double optic neuritis with cerebral embolism, hazarding the suggestion that its non-occurrence in most cases may have the same explanation as the rarity of loss of sensation, and be due to the fact that the usual cerebral embolism is of the Sylvian artery. Optic neuritis, however, goes rather with kinds of disease than with seats.

XXI.—*A Case of Acute Œdema of the Larynx.* By W. Pugin Thornton. *Read February* 11, 1876.

THE following case came under my care in January of last year, and is a striking example of acute œdema of the larynx, the disease which, followed by œdema of the lungs, proved fatal to a late member of this Society, one who is still keenly missed by many of his friends—Dr. John Murray.

In this case the œdema evidently arose from overwork, combined with the effects of extreme cold.

A cabman, on Saturday night, Jan. 9, having gone to bed at nine o'clock, woke up an hour afterwards with the two shirts he had on wet through with perspiration. He changed them for two more, and went to sleep again. In about an hour he again woke up in the same state of profuse sweating. He changed his shirts and took a glass of hot rum-and-water, and soon fell asleep, not awaking until morning. His breathing then was slightly oppressed, and when he came to take his breakfast he found some difficulty in swallowing. He did not become materially worse until Monday night, which he passed in a very restless state, and in the morning his breathing was noisy, and he was unable to take solid food. Tuesday night he was obliged to sit propped up in bed, and slept only 'off and on.' On Wednesday morn-

ing his symptoms were greatly aggravated, and at mid-day he was sent to me by Mr. W. H. Evans, of South Hampstead, with the request that I would admit him, if possible, into the Throat Hospital. He was at this time unable to swallow even a teaspoonful of fluid, and his face was getting livid from the extreme dyspnœa under which he was labouring. On examination the epiglottis was seen rising up as an œdematous mass, and the arytenoid cartilages were observed to bulge out in the same œdematous condition. The whole appearance of the larynx could be likened to one side of a cottage-loaf looked at from above downwards, the upper portion being the epiglottis, the lower the arytenoid cartilages, swollen so as to look like one mass. There was more œdema on the right side, but on both sides it was very extreme, and the wonder was that the man had managed to breathe at all through a larynx so obstructed. If it had not been that the left side was less affected than the right, I think he must have been suffocated before I saw him. I immediately scarified these parts very freely, the portion of the mucous membrane covering the epiglottis by means of a gum lancet on a long handle, and the lower portion with the arytenoids by means of an unguarded laryngeal scarifier. The man was then immediately made to gargle as well as he could with hot water, and told to encourage the bleeding by a sucking action. When the bleeding ceased, which was in about ten minutes, his throat was scarified again, when none of the former incisions could be seen. After the first scarification his breathing improved wonderfully, his face recovering its natural colour. He took some milk out of a spoon directly after the second operation; and within an hour from the first scarification he was able to drink beef-tea and brandy-and-water from a cup. Two hours later I scarified the parts again; at this time the glottis could just be seen on deep inspiration. From this period the patient made an uninterrupted recovery, and at the end of a month his larynx had lost all trace of the œdema, and presented a perfectly normal appearance. The right arytenoid was the last portion to retain any œdematous aspect. It was obvious that there had never been any ulceration in the larynx. There was a slight trace of albumen on the day that he came into the hospital, but it had completely disappeared at the end of forty-eight hours. The same evening his temperature was noticed to have risen one degree, but on the following day it was normal.

The man's account was, that for a fortnight before his illness he had been doing night as well as his usual day work, that he had only been able to get four to five hours sleep daily during the whole fourteen days; that he had been obliged to wash his cab night and morning when the weather was bitterly cold (for the first ten days of this fortnight snow being on the ground, and one night the thermometer had fallen to fourteen degrees), and on three occasions he had driven all night after getting his feet wet through. Until the night on which he was taken ill he had for years enjoyed good health, even during his fortnight of hard work, though he had always felt tired, and 'frozen to death by the cold.' He had never suffered from syphilis, and was a temperate man.

Since seeing this case I have met with one in which it was quite evident that the œdema arose in a mucous membrane perfectly free from congestion, and rather, if anything, in membrane of a paler colour than normal. It happened in this way: I had, at half-past five o'clock one afternoon, examined the throat of a man who had small outgrowths at the base of the epiglottis internally. He had been under my care in the Throat Hospital a fortnight. No instrumental treatment had taken place that day, but at eleven o'clock at night I was called to see him, and found him suffering from slight difficulty of breathing. It was said that two hours previously his breathing had first been noticed to be affected, and that it gradually had become worse. There was œdema of the right arytenoid (as a fact œdema of the larynx is most commonly noticed to commence on the right side), and at the base of the epiglottis externally, but the mucous membrane around was, as has been mentioned before, quite free from any inflammation. This fact was also borne out by the case of a medical man whom I was called in to see on the day of our last meeting. With him also the œdema, which had attacked the right arytenoid cartilage, the vocal cord, and the ventricular band of the same side, was surrounded by an uncongested mucous membrane. I have made these observations because it has been stated by some writers that œdema of the larynx is always preceded by acute congestion of the mucous membrane in which it arises. I would suggest in future that this disease should be classed under the heading of *Acute Œdema of the Larynx*, and not ranged under *Acute Laryngitis*, as has been the case heretofore.

XXII.—*Case of Reduction of Partial Dislocation of the Astragalus of long standing.* By GEORGE BROWN. *Read February* 11, 1876.

DISLOCATIONS of the astragalus are, I believe, among the rarer forms of surgical accidents, and are generally most difficult to treat. I have had an opportunity of seeing only two cases of this kind of injury, one the case which I wish to bring before your notice this evening, the other that of a girl about twelve years of age, who was an in-patient of Charing Cross Hospital when I was House Surgeon to that institution two and a half years ago. In this latter case the anterior ligament of the ankle-joint was ruptured, the astragalus was dislocated forwards, and its superior articular surface could be felt quite subcutaneous, some distance in front of the tibia. The patient did not apply to the hospital for some days after the receipt of the injury, being under the impression that it was only a bad sprain. There was but little difficulty in reducing the dislocation, but at first it was almost impossible to keep the bone in position, as it was found that whenever the bandages were re-adjusted the bone had again slipped forwards. However, we were, after a time, more successful in fixing the bone, and at the end of eleven weeks the patient was discharged from the hospital cured, but she found it necessary to wear a special boot with iron supports for six months afterwards.

In the present case no difficulty was experienced in keeping the bone in position, and the result was that the patient recovered the perfect use of the foot and ankle-joint in less than two months.

The patient, Clara P., æt. 16, accidentally slipped down a step about two weeks before Easter 1874, and twisted her left foot. Previous to this she had nothing the matter with either of her feet or ankle-joints except that she was naturally flat-footed. The foot was very painful after the accident, but as it was thought to be nothing more than a 'sprain,' no medical advice was sought. On Easter Monday she took a long walk, after which she suffered great pain of the foot, and there was, the mother states, a decided swelling on its inner side. Next day a surgeon was consulted, who said that there was nothing the matter with the foot beyond weakness of the ankle-joint, due to constitutional

causes, and that its mis-shapen condition was a consequenee of her being flat-footed. He prescribed rest and strengthening medicines, and said that little improvement could be expected for some time. It should be stated that the gentleman consulted did not examine the sound foot or compare it with the other. Several months elapsed, but the foot gradually grew worse, the deformity became more marked, and the difficulty of walking greater. Towards the end of the year she was scarcely able to walk without assistance. Generally she leant on another person's arm when she walked out, but she spent the greater portion of her time either sitting or lying down, as the foot pained her very much after standing or walking. Often the pain was so great that she was unable to sleep at night.

Early in January 1875 I was attending other members of the same family, when the mother requested me to examine her daughter's foot and advise as to treatment, as she feared that she would become a permanent cripple.

On comparing the two feet it was at once apparent that there was displacement of the astragalus forwards and inwards. The hollow which should exist between the internal malleolus and the scaphoid tubercle was entirely obliterated. This was due to the head of the astragalus slipping forwards and inwards, which at this point was much more prominent than either of the two bony processes before mentioned. Over this projection the skin was tightly stretched. In front of the ankle-joint and on its outer side, where the head of the astragalus should be felt, there was a considerable depression. The tendon of the extensor proprius pollicis and long extensor tendons of the toes were much contracted, and the outer side of the foot was drawn upwards. On asking the patient to walk across the room I found that she was unable to place the outer side of the foot on the ground, and that the whole weight of the body in walking was borne on its inner side. There was almost entire loss of power of extension and flexion of the foot.

When I had given my opinion as to the nature of the case, the mother thanked me and said that she would at once take her daughter to Mr. ——, mentioning the name of a 'bone-setter,' and appeared to be surprised when I told her that the treatment of such cases came within the province of the surgeon. However, I obtained her consent to do whatever I thought necessary.

Having placed the patient in the supine position, I re-

quested the mother to hold the leg firmly whilst I attempted to restore the bone to its proper position. I then grasped the foot near the toes with the right hand and forcibly extended it as much as possible, at the same time pressing with the left hand on the projecting head of the astragalus. In a minute the bone slipped into its natural position with a distinct snap, and its head could be both seen and felt projecting on the outer side, quite filling up the depression which previously existed. The two feet were now to all appearances perfectly symmetrical. Having no splint at hand, I was unable to do more than apply a pad and bandage around the foot. On calling next day (Jan. 10) I found that the astragalus had again slipped out of position during the night, and the foot presented the same appearance as before. This time reduction was effected very readily. I then applied a well-padded side-splint with foot-piece to the inner side of the leg, and kept the patient at rest. It is unnecessary to enter into details as to the further progress of the case. At the end of seven weeks I dispensed with the splint, and permitted the patient to take a little exercise. For some time she could not walk without assistance, but she can now—just thirteen months after reduction was effected—walk long distances without giving rise to pain. The patient is in attendance, so that you will be able to see the present condition of the foot for yourselves. She has the perfect use of the joint, and the feet are as nearly as possible symmetrical.

The exact nature of the case is, I think, pretty clear from its history. There is no doubt that when the patient twisted her foot, a little before Easter 1874, some fibres of the internal lateral ligament of the ankle-joint, as well as those of the calcaneo-scaphoid ligament, which so largely assists in keeping the head of the astragalus in position, were ruptured. At first the displacement was very slight, but having lost its chief internal support, the head of the bone was gradually forced forwards and inwards by the weight of the body until the deformity became very marked, and the ankle-joint almost useless. In the early history of the case it would have required very careful examination and comparison with the sound foot in order to detect the exact nature of the injury, but when I saw her nine months after the original injury its true character was obvious at a glance.

I must apologise for having occupied the time of the Society to the extent that I have done, but I thought it necessary to enter into the details of the case with some

minuteness, as, apart from its comparative rarity, it is of interest as being one of a class of cases that so frequently fall into the hands of 'bone-setters,' and by which these charlatans sometimes gain a great deal of credit at the expense of the profession.

XXIII.—*A Case of Purpura Rheumatica.* By HENRY G. TREND. *Read February* 11, 1876. *Communicated by* J. RUSSELL REYNOLDS, M.D.

C. T., æt. 17, a tall, bony lad, has been known to me for many years, and I have attended him with the usual diseases of childhood. During the early part of the year he has been to me occasionally, suffering from dyspepsia and debility. He became thin and anæmic, and was altogether below par.

On April 6, while engaged in cellar-work, a cork flew out of a soda-water bottle and inflicted a deep incised wound, about 2½ inches long, on the outer part of the right fore-arm. Two silver sutures brought the edges well together, but it did not heal kindly, and it was quite a month before union was complete.

On May 28 he came to me with a very furred tongue, feverish, and a pulse of 120. I sent him home to bed, and ordered an aperient and effervescing saline. On the 29th I saw him; he was still very feverish, and complained of slight sore throat. The two following days he seemed better, but on the 31st there was well-marked tonsilitis; this quickly subsided, but early in the morning of June 3 he had a distinct rigor; when I saw him at twelve o'clock he complained of swelling about the left elbow, and both ankle-joints were exquisitely tender. Pulse, 110; temp. 102°. On the 4th some few purpuric spots were noticed in the evening about the left elbow, and the left knee-joint became swollen and painful. Pulse and temperature the same as on the previous day. Early on the 5th I was hurriedly sent for, and found the left arm double its proper size, cold, and literally as black as a coal from the shoulder to the tips of the fingers. No pulse perceptible at that wrist. There was no tenderness in the axilla. The lad's countenance was bad; tongue very dirty; pulse at right wrist 104 and feeble. Temp. still 102°. I wrapped the limb

in cotton-wool, ordered him brandy and beef-tea freely. At 1 P.M. he had rallied somewhat, and the limb was decidedly less swollen. Dr. J. Russell Reynolds saw him with me at 5 P.M. The limb was ordered to be kept in the wool. He was to continue his nourishment and stimulant, and take 3 ss. doses of perchloride of iron. Later in the evening some purpuric patches were visible on the left ankle. Pulse 112; temp. 102½°. The bowels had been relieved, and there was no albumen in the urine. Dr. J. Russell Reynolds saw him again with me on the 6th. The arm was decidedly better; a small bleb had formed at the bend of the elbow, and was discharging. Temperature and pulse the same as yesterday; tongue foul. Some more purpuric patches are to be seen on the right elbow and fore-arm. To continue the nourishment and iron.

On the 7th the relatives particularly wished Mr. Walter Coulson to see him. The inflammation was then evidently subsiding in the left arm. Temp. 101°; pulse 98. The purpuric patches about the legs present much the same appearance. The lobes of both ears are now much swollen and red. The bowels are very much relaxed, and the last three evacuations are evidently dysenteric. Ordered lead and opium, arrowroot with brandy and beef-tea.

Sir William Jenner and Dr. J. Russell Reynolds saw him with me on the 8th. The left arm was much improved; a large bleb 12 inches by 2 had formed on the upper surface of the arm; the fingers are now perfectly natural, and the duskiness does not extend more than two inches above the elbow. No tenderness in the skin. Heart-sounds normal. Pulse 96; temp. 101°. There is some tenderness in each inguinal region; while both knee-joints and the right ankle are very swollen and painful.

Several more dusky spots have appeared. The abdomen is slightly tympanitic. There has been only one bloody stool to-day. Ordered to continue the iron and nourishment, with a lead or opium pill at night.

9.—Better in every respect, but the tongue still foul.

10.—Continues better, though the joints are very painful, and the tongue still dirty. The bowels are comfortable; the urine clear and plentiful. The left arm continues to improve.

11.—Tongue continues loaded, but there seems a disposition to clean at the tip and edges. Pulse 96; temp. 101.° The left arm has much improved, and has returned to

its normal size, while the large bleb remains unbroken. The joints continue painful, but there has been no fresh patch of purpura, and those existing are duskier and fading. Bowels natural; urine copious. He asks for food. Ordered oysters and to continue his other nourishment and stimulant.

12.—Tongue still dirty. Pulse 91; temp. 100.° The large bleb on the left arm broke this morning, discharging about 8 ozs. of offensive reddish-looking fluid.

13.—Tongue cleaning. Pulse 92; temp. 100°. Bowels regular. Urine clear and plentiful. The arm still discharges. Fresh patches of purpuric rash have appeared on the left thigh and leg, but they do not look so florid. Continues his nourishment and steel. I had him moved on to a sofa and wheeled into an adjoining room. He has been constantly kept sponged with tepid water, to which has been added toilet vinegar, while the bedroom has been thoroughly well ventilated.

16.—Better in every respect. A large well-defined slough is now apparent on the upper and outer portion of the forearm, 12 inches by 2 inches. The edges look healthy.

From this date he gradually improved. At the end of the month the lower portion of the slough came away, leaving a healthy-looking granulating surface.

A few days afterwards the larger and upper portion came away. He now progressed rapidly, and gained flesh fast. On Aug. 17 the wound was healed, and on the following day he went to Hastings. He came back the beginning of September, looking better than I ever remember to have seen him.

After the slough had entirely come away I could not extend the arm much beyond a right angle; there was very considerable loss of muscular tissue, and I was very fearful there would be more or less contraction. When he went into the country he had much more power over it, and by practising rowing he brought the arm into perfect use.

I examined it carefully to-day (Oct. 18); there is very little if any difference between the size of the two arms. Every movement is complete, and the only trace of the former mischief is the large and ugly scar.

When I came to think as to what was the real 'Fons et origo' of this lad's illness I was completely baffled, and neither of the eminent consultees were able to relieve my embarrassment. The drainage of the house is perfect. There

was no other illness in the family, and he had been exposed to no contagion of any kind. He is a remarkably steady, well-conducted boy, regular in all his habits, and surrounded with every comfort. The only flaw in his mode of living was his objection to vegetables; bread and meat, or bread and cheese, being his usual diet. Is it possible that the absence of these nitrogenous products conduced in any way to the state in which he was? One likes to be able to account for diseases when called upon to treat them, and I throw this suggestion out as a kind of 'dernier ressort.'

The symptoms throughout were most severe. For many days he hung as it were between life and death. I was unable to relieve the anxiety of his relations by any positive statement, and was obliged to be content with giving a most doubtful prognosis.

The nursing by his mother and sister all through this most tedious case was excellent.

XXIV.—*Case of Cancer of the Breast.* By W. B. Kesteven, M.D. *Read February* 11, 1876.

IN vol. vi. p. 147, of the Society's 'Transactions,' is related 'A Case of Primary Scirrhus of the Breast, treated by Caustics and Incisions.' In concluding that narrative I observed: 'With reference to the pathology of cancer, the present instance seems to support the view that cancer is a local disease. In this case, although the disease reappeared within two years of its first removal—probably from a small portion of disease having been left—yet I imagine that a sufficiently long period (six years) has been allowed to elapse since the second removal (without recurrence) to allow us to hope that the cure is complete. This conclusion is further strengthened by the fact of the advanced age and subsequent good health of the patient.'

This case was read on April 3, 1873. I regret to say that the issue has not borne out my hopeful conclusions, but wholly the reverse, both as to the local character of the disease, and, consequently, of its complete cure. The patient, I have to state, died in the latter part of 1875, having lingered through many months of suffering from malignant disease of the rectum and osteo-sarcoma of the femur.

I suspect that the 'chronic rheumatism' of which she complained in 1870 was the incipient inroad of the cancerous disease in the femur, since in 1874 I was asked to go down again into the country to see her, and then found that she was the subject of carcinoma of the rectum and disease of the femur.

I have considered it to be due to the Society that these facts should be placed before it, or the case, as it now stands in the 'Transactions,' might convey a false inference.

XXV.—*A Case of Morphœa.* By Dyce Duckworth, M.D. *Read February* 25, 1876.

J. M., æt. 26, a clerk, came under observation first in May 1872. Seven weeks previously he had noticed a change in the appearance and texture of the skin on the left side of the forehead. He had had no pain or peculiar sensations in this region before or after the change appeared. He had suffered from frontal headaches for about two years previously.

At that time there was a smooth slightly depressed and glossy patch on the left frontal region, colour of ivory, and incapable of being pinched up by the finger and thumb. A faint mauve tint was observed at the edges of the patch. The left eyebrow was unaffected. The disorder began about a quarter of an inch above the level of the eyebrow, and extended upwards upon the hairy scalp, where a slight branny desquamation was seen, and some loss of hair had occurred. The hairs had both fallen out and broken off short. The patch seemed to be spreading towards the temporal region.

During an examination of this patient on one occasion he felt faint, and subsequently perspired profusely about the head and face. It was then distinctly observed that the affected patch was dry, and that no sudoriferous action occurred upon it.

The sensibility was blunted, but not lost. A cast was made of the face at this time, and quinine was prescribed. The disease slowly spread towards the vertex, the hairs becoming loose and coming out in bundles. Pain and tenderness all over frontal region, and tingling sensation

over bridge of the nose. The patient went to Lancashire to a situation, and in April 1873 wrote to report that the patch was increasing in size. In August of that year he came to show himself, and the following points were noted:— 'The patch has so far altered that it is larger in all its dimensions. It now reaches the inner end of the left eyebrow, has spread chiefly to the left towards the temple, and has extended very slightly upon the vertex. It has assumed a somewhat darker hue, and is now of a raw sienna colour. Some pink vascularity is visible here and there, and some small venules can also be seen in places. The greater portion of the surface has become raised, illustrating the change from morphœa plana into morphœa tuberosa. The sensibility is greater on the flat than on the raised portions. Some fine downy hairs are seen growing near the centre of the patch, but there are still broken hair-stumps to be met with at intervals, mostly near the margins. There is an oppressive sensation felt in the affected part, and tenderness most marked near the vertex.' Cod-liver oil and quinine were prescribed for him.

The patient was next seen in March 1875. Nothing had been applied locally for fifteen months. The patch was less obvious on the forehead, and had not encroached further upon the inner end of the eyebrow; it was less raised in parts than formerly, and was depressed in the greater part of its course. Short hairs had grown upon some of the depressed portions. No pain was complained of except on combing the patch smartly.

The patient was next seen in February 1876, when the frontal portion was found to be assuming a more natural aspect, but a little pigmentation was apparent where the terminal processes had been. No progress upwards had occurred. The raised portions were less prominent. Sensation was still blunted, and the patient had a feeling of tightness in the patch. Some healthy hairs grew from the flattened portions. The affected area seemed more vascular and warmer than the adjacent integuments.

The case was described as a typical example of morphœa, and Dr. Duckworth drew attention to the fact that he had met with no example of the disease existing on the right side of the forehead, while he had collected six cases where the region supplied by the left supra-orbital branch of the fifth nerve was affected. No local treatment seemed to be of any avail. The prognosis was ultimately favourable, though six

or eight years might elapse before recovery took place. Dr. Duckworth considered that no facts existed to prove that there was any alliance between this affection and true leprosy, although such a connection was believed in by some writers. Tonics and attention to the general health were the only indicated methods of treatment.

XXVI.—*A Case of Recovery from Bulbar Paralysis.* By Thomas Stretch Dowse, M.D. *Read February* 26, 1876.

Daniel W., æt. 20, was admitted into the Central London Sick Asylum, Highgate, on June 30, 1873. He was one of fourteen children, nine of whom are living; the remaining five died young, of convulsions. The father is living, and a healthy man. The mother, who was previously healthy, died in twelve hours of apoplexy. From this young man's history it appears that from birth he was a well-developed and healthy child until he was nine months old, and commencing to cut his teeth. At this time he began to have fits, and continued to have them until he was two years of age. He grew up a delicate child, but went to school, and was fairly intelligent.

When sixteen years of age, he became subject to a series of epileptic seizures; the attacks were frequent, of short duration, but sometimes as many as 30 in 24 hours. Then followed a general paralysis, involving the medulla and spinal cord, implicating all nerves, except the 1st, 2nd, 3rd, 4th, and 6th. There was trismus of the lower jaw, with complete anesthesia of those parts supplied by the sensory division of the 5th, and absence of both motion and sensation in the trunk and the extremities. The facial muscles were devoid of voluntary power, but the portio mollis of the 7th was unaffected. The tongue was motionless, and the first and second acts of deglutition could not be performed. The sudden attacks of vomiting, hurried and panting respiration, quick and irregular action of the heart, also gave evidence of the vagus being involved.

He came under my care some four years after this, in the following condition:—He was of dark complexion, stunted growth, emaciated, and pale; the teeth were well formed, regular, and gave no evidence of hereditary syphilitic taint.

Upon ophthalmoscopic examination, the right eye showed cupping of disc, with enlarged vessels; the left was similarly affected, but not to the same extent. The special senses and intelligence were unaffected. There was some stiffness about the lower jaw from palsy of the pterygoid muscles. He was unable to co-ordinate the labial muscles, to bring the lips together, or to whistle, and saliva was profusely discharged from the mouth, to catch which he was constantly holding up his handkerchief. The tongue was lying immovable behind the lower row of teeth. He could neither protrude, retract, or turn it to either side; even now it will be seen that he is unable to push the tip well back to the soft palate. Its surface had the characteristic flaccid and wrinkled appearance; the pillars of the fauces were immovable, and to a certain extent this is the case at the present time. He was absolutely dumb, and no sound of any kind could be made to issue from the larynx. Upon laryngoscopic examination, however, the vocal cords were found to move freely. The act of swallowing was most imperfectly performed, and occasionally fluids would be forcibly returned through the nostrils. At this time, however, he was just commencing to regain voluntary power over the muscles of mastication, and as the paralysis of the upper extremities had considerably improved, he contrived slowly to feed himself; still, owing to the immobility of the tongue, he had to fill the mouth with food and fairly push it through the fauces into the bag of the pharynx. Now we have to consider the retrogression of the paralysis. This undoubtedly commenced in the 5th nerve, and in the muscles of mastication; then the anesthesia gradually and completely subsided, so that those parts supplied by the sensory division of the 5th were normally æsthetic. The 7th then regained voluntary and co-ordinate power. He could bring the lips well together, and approximate them to take any form he desired. With this the flow of saliva from the mouth gradually ceased, and the power of deglutition improved so much that he could swallow without much difficulty. The palsy of the tongue, absence of phonation, and complete paralysis of the lower limbs, still continued. He remained in this state for nearly twelve months, without any progression. There was very marked muscular atrophy of the lower limbs, with fibrillation, but the extensors of the leg were more involved than the flexors, in consequence of which the heels were forcibly drawn up,

as in equino-valgus. Not only was there complete absence of movement, but sensation was in like manner affected. I then began to use the electric current to the parts paralysed, and injected the $\frac{1}{20}$th gr. of the sulphate of atropia, and the $\frac{1}{6}$th of a gr. of strychnia daily into the lower limbs, and divided the Achilles tendons. When I first applied galvanism to the tongue, I used the induced current intensified from a two-celled Stoher's battery upon five or six occasions without any good result. I then applied the continuous current from six cells of Stoher's battery, and after a few applications the tongue was forcibly protruded, and as sharply retracted, and it was not for some days that he regained anything like voluntary control over it to serve the purpose of articulation. It must be remembered that the return of voluntary power could scarcely be said to be gradual, for directly the continuous current was applied of sufficient intensity, almost complete power over it was regained. It was very different with the lower limbs: here it was applied for months before a similar result was obtained (and the deduction to be drawn from this is of some interest, for it has been noted by Duchenne that in bulbar paralysis you have paralysis of the tongue without atrophy, and paralysis of muscles in other parts with fatty degeneration). Under this treatment, with the internal administration of cod-liver oil, quinine, and phosphorus, he gradually but completely recovered. The question now arises, What was the nature of the medullary lesion to give rise to this well-marked and highly characteristic palsy? I am quite ready to admit that I am unable to say; yet in all probability it was the result of pressure rather from within than from without; possibly from venous extravasation during one of the severe epileptic seizures from which he suffered.

I of course know full well that the signs and symptoms here narrated differ from those of progressive labio-glosso laryngeal paralysis, so called. Dr. Wilks has recorded many cases where general paralysis has been associated with bulbar paralysis, and in some of these the general paralysis has disappeared, but I believe in all the bulbar paralysis has remained persistent. I have now under my care several such cases, and again it is true that in those cases where the bulbar paralysis is associated with general paralysis there is absence of both motion and sensation, and the muscles do not respond to electric stimuli; whereas in bulbar paralysis com-

mencing in the tongue and lips, and then invading the extremities, there is no loss of sensation, no loss of electro-muscular sensibility, but progressive muscular atrophy.

XXVII.—*Cases of Leuchæmia.* By W. Moxon, M.D. *Read February* 25, 1876.

J. S., æt. 45, cook at a club; his father and mother living and healthy. He himself always enjoyed good health until November 1874, when he began to feel persistent pain in his right hypochondrium. The pain was of a dull, aching character, but sometimes sharper. After this pain had troubled him for about six weeks, he rather suddenly found himself jaundiced. Still he continued at his work until the end of March, when he came into Guy's Hospital under my care. He remained until May, and then, thinking himself very much relieved, he, after a short stay at a convalescent home, resumed partial employment, and then kept at light work all the summer and early autumn. But in May I examined his blood and found that the white corpuscles were in great excess, twelve to fifteen times more numerous than they are in healthy blood. At the same time the spleen became palpable, extending one inch below the ribs in deep inspiration, and being firm to the touch. There was no albumen in the urine. On finding the leuchæmic state of the blood I gave him phosphorus, on the faith of statements in its favour which I had read. He took $\frac{1}{50}$th grain with mucilage and peppermint-water from early June until September, and I examined his blood every week. The phosphorus did not appear to have the slightest effect in diminishing the number of white corpuscles. They were as much in excess in September as in June, but there was no augmentation of their proportion. The physical characters of the blood were otherwise constant and remarkable. The little drop placed on a glass microscope-slide and the cover-glass put over it, spread in a curious way, expanding in out-radiating divisions, each of which advanced with a very convex border, the appearance being as if the blood were greasy. It coagulated in five minutes, fresh fibrine threads appearing until ten minutes had elapsed. These fibrine threads did not ever appear as an uniform network, but

came in many places in bird's-nest-like clusters, from which the fibrine fibrils radiated. There were an unusual number of small granules, such as are not infrequent in the blood of dyspeptic persons: minute grains, single or clustered, of rounded form, and of $\frac{1}{6}$th diameter of a red corpuscle. His condition meantime had continued much the same as formerly, severe itching of the skin being added to his troubles. He did not, however, lose weight, and he believed himself to be gradually improving. The jaundice, although decided and deep, yet seemed lighter in hue than formerly. His motions were of varying colour, always containing bile in fair quantity (he used to imitate their tint with water-colour paints). He was intelligently watchful of his diet, to which his place in the City Club kitchen afforded him ample opportunities of indulgently attending, and he found that there was, as he expressed it, much bile in butter and in fat of fresh meat, but no bile in bacon fat, which he took freely, and to which, with bread and soup, his experience led him to almost entirely restrict himself.

But a change from this comparatively favourable state of things came at length suddenly. He came to me on Nov. 3, very ill, looking collapsed, and complaining of excessive flatulence and of the pain across the hypochondria in an aggravated form. I sent him at once into Guy's. When he had been in a few days a strongly marked peritoneal friction fremitus and murmur appeared over the liver. The liver was now rather larger than formerly; and in a vertical line with the region of the gall-bladder, at the level of the umbilicus, were palpable two prominences, one beside the other, of apparently equal size. The spleen was just palpable below the left eighth costal cartilage. Mr. Golding Bird examined the blood on a warm stage, and reported that 'the red corpuscles almost immediately fused together, and could not severally be made out. The white corpuscles *all* moved, and all appeared like normal white cells, only ten to eleven times greater in number.' In the course of the next few days his jaundice deepened, but there was no xanthopsia either now or at any previous time in his illness. The abdomen became more tense, and his suffering from flatulence, nausea, &c., grew worse, until a collapsed and torpid state set in on Nov. 12. The temperature at the same time rose to 103·8°, having previously been about 90°. He continued to sink, and died on Nov. 16. The

white cells of the blood maintained their excessive number to the last.

The post-mortem examination was made eighteen hours after death by Dr. Goodhart, who reported as follows:—

The *brain* was healthy, and weighed 48oz.

The *ribs* were most of them peculiarly friable, so that they broke with the greatest ease, the fracture being not unlike that of some softish sugar-stick in its absence of sudden snapping. The sternum was also rather brittle. Both contained a grumous thick red fluid in a medulla of the same colour, which was crowded with white blood-cells.

The *lungs* were both much congested, and the lower lobes were so airless that parts sank in water. There were one or two early patches of hepatization in the centre of these lobes, as if from bronchial extension.

The *trachea* was intensely inflamed (early acute tracheitis).

The *heart* weighed 10½ oz. Some very early pericarditis.

The *stomach* was rather large, the surface showed excess of mucus, and the cavity was full of black altered blood, mixed with food.

The *pylorus* was healthy. About two inches beyond the pylorus, just at the orifice of the common bile-duct, a new growth showed through the mucous membrane of the duodenum, and indurated its coats; a section showed the growth to be chiefly in the submucous tissue, and about the head of the *pancreas* outside it; a section of the latter showed indeed very little growth, but a tough fibrous substance outside the head, and matting the parts together. The portion of growth showing through the intestinal coat was perhaps half to two-thirds of an inch square. The structures in the portal fissure were surrounded by a tough substance, of which it was difficult to say whether it was merely the result of chronic inflammation or the extension of cancer along it. A large fleshy gland lay to the left of the fissure. The fissure was chiefly occupied superficially by a very dilated gall-duct, so large that the index finger entered it readily on opening it. A cylinder of clot filled the lower 1½ inches of the duct, and from it there came also a quantity of chocolate-coloured, grumous, broken-down blood, or blood and pus mixed. It was very like the stuff found in place of blood in leuchæmia. Only this was not so everywhere, the blood in the heart was quite ordinary looking. The cystic duct was also much

dilated, and the gall-bladder also; the latter would hold two to three ounces. Its contents were blood-tinted mucus and some blood-clot. The coats, and also those of the ducts, were tough and leathery. The gall-bladder had also this peculiarity: that it had numerous pin-points in its mucous membrane, which led into small sacculi like those in the bladder under the circumstance of urethral stricture, and they exuded two or three drops of muco-pus. One could not help suspecting that the condition outside and to the right of the gall-bladder was due to an extension, by the means of an abscess, to the outside, from local and slight intra-vesical inflammation. To the right of the gall-bladder was found a large cyst nearly equal in size to the gall-bladder itself, and which had partially dissected out the gall-bladder from its bed. This had bulged beyond the edge of the liver, pushing it up partially, and then had opened, or was just opening, internally. It extended from the neck of the gall-bladder to just beyond the free edge of the liver, and had doubtless been felt during life as one of the masses, the one less distinct of the two. Its contents were chiefly pus of a liquid kind and blood-clot. Its wall next the liver was quite smooth. I hunted with great care to find an aperture from the gall-bladder into it, or from it into the liver, but without success; though I am still inclined, from the contents being mixed with blood-clot, to think that it did communicate with the former. Tracing the bile-ducts on into the liver, they were everywhere much dilated and thick, like arteries. They most of them contained pus, some of the smaller ones mucus, and some a fluid tinted with blood. They contained no bile. Cutting many of them open, all the large ones poured out quantities of grumous bloody pus like that in the gall-bladder, and on further slicing this was found to come from a slough (?) of the liver substance, extending from a suppurating branch of duct; this was not offensive. This spot was about in the centre of the right lobe. The blood-clot was, however, in the large ducts, cystic and choledochus, and the fluids in the ducts within the liver had less or even no blood. The liver was of a dark olive-green, mottled from hepatic field being darker than portal, and otherwise normal in appearance. It was large, and weighed 97 oz. The portal vein was normal, as was the hepatic artery.

The pancreatic duct was enormously dilated, so that it neared the size of the little finger. It was also thick, and

very tortuous. It appeared to be empty, and healthy in structure.

An examination of the growth microscopically did not show, as was expected, that it was lymphomatous. It was a veritable cancer. Section of the growth also showed another interesting feature, that it was suppurating in many minute points, so that it seemed probable that this led to the suppuration outside the gall-bladder by extension along the duct, and that possibly secondary to the suppuration in the liver.

The kidneys weighed 14 oz. Both were deeply tinted with bile pigment of greenish hue. The pyramids had numerous small white streak-like spots in them, quite like gouty urate of soda points, only larger, and slightly bulging in the cut section. They were also very firm, and there were as many as five in a cluster here and there, and most of the pyramids were attacked. One rather large fibroma existed at one spot, and I am inclined to think that they all were of this nature.

The *bladder* contained ink-like urine.

The *clavicle* and *femur* were healthy.

The *spleen* weighed 19 oz.; softish, with many bulgings on its surface, due to hæmorrhage of liquid blood under its capsule.

Dr. Goodhart remarks:—'It was a question in my mind how far the leuchæmic state of blood was one of leuchæmia, supported as this hypothesis was by the state of the spleen to some extent, and by the marrow of some of the bones; or whether it was not really a state of suppuration of the blood or pus-cells in it rather, which had come about from the connection between portal vein and suppurating gall-ducts. The latter hypothesis is strongly negatived, however, by the fact that the cells of pus-like nature were not numerous enough, nor did the man have the fever of a suppurative state; and secondly, the cells were seen to move actively, while pus-cells are said not to do so.'

Case II.

(This report was kindly furnished me by my friend Mr. G. J. B. Stevens, of Stoke Newington.)

The subject of this history had been some years in business in Stoke Newington as a cheesemonger. He was a

short man, boyish-looking in the face, through having little whisker, and large, rather prominent eyes. Hair dark, scanty; skin fine, and transparent looking.

Nothing satisfactory could be learned as to his parents. His mother, he thought, had died of liver disease. Personally his previous health had been good, only suffering from occasional dyspeptic attacks from time to time, which he attributed to the butter he had to taste in the course of his business. He had never had syphilis. His children show decided marks of constitutional weakness. They are dull-looking and pale, and subject to pyrexial attacks. Their heads are large, and they take but slowly to walking. The eldest girl has had partial paralysis of the lower extremities from infancy, and besides the above noted marks of constitutional weakness she exhibits choreic movements while speaking, and has defective articulation.

The patient was 38 years of age, when he began to fail in health about the beginning of July 1875; and he was growing gradually weaker, when an accident, through collision of a cart he was driving, with another vehicle, appeared to act as a shock to him, although he did not receive any evident bodily injuries. After this occurrence he was weaker and nervous. On Aug. 9 he first consulted me, complaining of languor and loss of appetite, also of pains running from the loins to the testicles, and 'drawing them right up.' He then looked anæmic, and had a soft though regular pulse. The physical signs of his chest normal. The abdomen was distended, especially in its upper regions, and the liver could be felt much enlarged. The area of splenic dulness was extended beyond its normal limits. The tongue was slightly coated, and the breath foul.

Effervescing ammonia mixture, followed by one of acetate of iron, at first relieved the patient somewhat. The pains, however, became worse, especially at night, and chlorodyne was ordered for their relief.

On Sept. 20 Dr. Moxon saw the patient with me, and an examination of the blood was made. The white cells were found to be in great excess of their normal proportion. The urine contained then a little albumen, and also an excess of uric acid. A mixture was prescribed, containing $\frac{1}{60}$th grain of phosphorus with mucilage and peppermint, to be taken thrice daily; also two grains of quinine in pill every morning. The diet to consist of milk, farinaceous food, beef-

tea, and a little brandy, he being unable to take solid food.

At the end of a month, the treatment having been studiously carried out, the patient only seemed much weaker. The languor no better, pallor greater, and he had a fresh misery through aching in the limbs, especially in the wrists, severe enough to keep him awake at night, and only relieved by hot applications. The case now assumed an alarming aspect. His sight became rapidly impaired, the pulse quick and feeble, whilst attacks of faintness occurred. A systolic murmur became audible over the base of the heart at left side of sternum. The white corpuscles now numbered one for every two of the red. Yet the spleen was not large enough to descend below the ribs, except in deep inspirations; when the end of it could be felt, it was then observed to be firm and solid. Hæmorrhage occurred from the nose, gums, and kidneys on Oct. 22 and 23; Dr. Wilks also saw him then. On the 24th the patient complained of thumping noises in the head. His sight now became so much impaired that he could not make out the largest print.

On the 25th his pulse in the evening became variable, the breathing short and weak, and expiration delayed, so that a short groan accompanied each effort. He exhibited signs of facial paralysis on the left side, the mouth being drawn to the right. Both eyes were directed to the right, the left pupil answered to light less promptly than the right. Saliva dribbled from the mouth. The tongue could not be protruded beyond the teeth, and was directed to the right. His manner was irritable and excitable, but the intellectual powers were unimpaired. Soon after he fell into complete coma and died. During the apoplectic attack the bounding character of the pulse, and the alternate quiescent and stertorous character of the breathing, were well marked. The limbs were rigid, the left hand being strongly pronated and everted. Death took place shortly before 2 P.M. on 26th, the temperature going up to 108° shortly before life became extinct.

Autopsy thirty hours after death.—Head. On removing the calvaria and opening the dura mater, a thin clot was seen over the right hemisphere of the brain, the brain itself being moderately congested. The convolutions of the upper and anterior part of the right hemisphere were much flattened, and the surface bulged out. On incision into this part a clot

of the size of a pullet's egg was found lying just beneath the convoluted surface. It was quite recent, but in appearance it was pale-looking, as if cream were mixed with it. Around this clot there were numerous capillary effusions. The brain otherwise appeared normal. Its arteries were not atheromatous.

The *heart* was free from evidence of disease. The clots in the pulmonary artery and right heart were strongly buffed. The dark part had the same creamy appearance as the apoplectic patch in the brain.

The *lungs* were normal.

The *liver* was large and pale.

The *spleen* also was somewhat larger than natural, but weighed only 12 ounces. Its consistence was firm; its capsule showed minute white spots and flecks, and on section similar dots and lines were present, evidently the trabeculæ of the organ, somewhat increased in size and definition. Otherwise the spleen was quite natural in appearance.

The *kidneys* were somewhat congested, and a little enlarged. The capsule separated easily. The veins about the roots of the pyramids were full of recent *ante-mortem* clots.

The intestines were healthy, containing a few scybala.

I brought these cases under the notice of the Society—firstly, as instances to show that leuchæmia may be found present when the spleen is not of a size to draw attention or make a conspicuous feature of the case. In one of the cases the leuchæmia reached an extreme degree, and led to death by apoplexy in a manner very common in that disorder, and yet the spleen was not more than 12 ounces in weight. This is a clinical fact which is of itself of some importance.

The second point which the cases raise is one touching rather the pathology of the disease, although certainly not without clinical significance. I allude to the recently mooted view of Dr. Neumann, supported by Dr. Mosler, and noticed repeatedly by other observers: the view which supposes that leuchæmia is sometimes due to changes in the marrow of the bones. In the first of my cases, that of the jaundiced man, Dr. Goodhart, in his careful post-mortem examination, found that the marrow of the ribs was loaded with white blood-cells. Now this might be taken, and may be taken by some members of this Society, to support

Neumann's view. I will not anticipate any discussion on this point, but will content myself with saying that I do not hold that opinion; but I believe that the white corpuscles found in the marrow are none other than escaped white cells from the blood, which are deposited there. I believe that any one who makes microscopic examinations of leuchæmic tissues will find that the blood loaded with white cells circulates with difficulty, and the white cells accumulate in the small venules in surprising numbers. This has been insisted on by Dr. Magnus Huss, and I think very rightly. Now the circulation in the bones is carried on in rigid channels, and so under restraint. Hence we find that, unlike the case in all other tissues, the small arteries do not course with the veins, but occupy different channels; to the end that the vessels may not, when swollen in the rigid channel, obstruct the other. But if, in the presence of this difficulty of venous circulation in the bones, we recognise also the great impediment to the overflow of leuchæmic blood which its white cells produce, we may perceive that in these straitened channels the swollen veins will have their contents often impacted, so that the marrow will become congested through the difficulty of exit of its venous blood. Thus will arise those conditions which we know from Cohnheim's experiments to be of a kind to induce escape of the white cells out of the blood into the surrounding texture—an escape which will be furthered by the exceeding delicacy of the walls of the capillaries, and of the areolar textures within the hollows of bones. The presence of white cells in the marrow is thus a certain and deducible consequence of, and not a cause of, leuchæmia.

The third point which I wish to submit to the Society is again pathological: with a reference to the divided state of the nosology of leuchæmia. It is well known that leuchæmia has been for a long time, if not almost ever since it was at all certainly known, divided into lymphatic and splenic leuchæmia. I would, however diffidently, express my dissent from this view, and found my dissent partly on such facts as these which I have brought forward.

Fourthly, I believe that the so-called 'lymphatic' leuchæmia arises in exactly the same way as I have just shown that the medullary leuchæmia probably arises—in a way secondary to the splenic leuchæmia, by the escape of the white cells from the blood. Thus Dr. Klein's researches, I believe, led him

to the conclusion that the lymphatic white cells found in the texture spaces are outwandered white cells from the blood. Of the truth of such a view I have no doubt; and if this be so, and as we have a great excess of the white cells in leuchæmia, is it not to be naturally supposed that the outwandering of the white cells into the tissue spaces will be greatly increased in leuchæmia? Mr. Golding Bird's observation in my first case proves that the leuchæmic white cells have the same amœboid moving power which normal white blood-cells possess, and to which their power of wandering from the vessels is commonly ascribed. But if thus outwandered, the white blood-cells are to all intents and purposes lymph-cells, and will naturally in the course of the circulation go up and enter the lymphatic glands. Now if the way through the glands be free, then the lymph-cells will pass on freely and reach the blood again, and there will be no enlargement of the glands, as in so-called splenic leuchæmia. But if the glands from any cause be unable to allow this excess of lymph corpuscles to pass, then the glands will swell by the continual accession of the lymph-cells from the lymph-stream, and thus give rise to the false idea of a 'lymphatic leuchæmia' on the part of those who argue that because the glands are full of white-blood-cell like bodies, therefore the glands produce these bodies. It is not only hypothetically that I advance this view of the passage of the white cells through the texture spaces and lymph-stream into the lymph-glands. I have repeatedly found the texture spaces in leuchæmia highly charged with white blood-cells. It has long been well known that in the liver and kidney such escape of the white cells is the rule in leuchæmia. I have seen it in the membranes of the brain, in the heart, diaphragm, mucous membrane of the intestine, and other places, so that I believe the enlargement of lymphatic glands arises always secondarily in leuchæmia by accumulation in them of escaped white blood-cells. So that lymphatic leuchæmia is a myth; and the pathology of leuchæmia, now so complex, should be simplified, when it will better conform with the clinical uniformity which characterises the disease.

In further support of this position, I would say that I have never seen a purely lymphatic leuchæmia, and I have searched for records of authentic cases of lymphatic leuchæmia, and found that cases purporting to be of this nature are exceedingly rare. A large proportion of these few

are invalidated through the evidence of the leuchæmia being very doubtful, being founded only on microscopic examination of the blood after death. Of the half-dozen cases, English and foreign, which are advanced as lymphatic leuchæmia, those in which the leuchæmia is certain have shown much enlargement of the spleen along with the enlargement of the lymphatic glands. There remain two or three cases in which the lymphatic glands were large along with a certain increase of the white cells of the blood when the spleen was not judged large. In one of these by Dr. Stephen Ward, the size of the spleen was doubtful, and in reference to it I would show my cases just read, in which leuchæmia with very little enlargement of the spleen was observed, without any enlargement of the glands being present. A secondary enlargement of the glands might have existed in my cases, when they would have been in all points parallel with the case described by Dr. Ward.

Fifthly, I would draw attention to the case in which the main disease was cancer about the bile-ducts. Here it is quite possible to hold that the term leuchæmia hardly applies, since the proportion of white cells did not exceed about fifteen times the proper number, and it is even generally held that such a proportion does not make true leuchæmia. Now if such a view be taken it would exclude the only other case I could find advanced as purely lymphatic leuchæmia—that by Dr. Strangways Hounsell, in which only fifteen times the proper number of white blood-cells were present. If, on the other hand, my case is held to have been truly leuchæmic, then since there was no enlargement of the glands at all in my case, and the spleen was no larger than the spleen in Dr. Hounsell's case, what reason is there to doubt that in each case there was the same origin of the slight leuchæmia in the slight enlargement of the spleen, the glands being secondarily enlarged in the one case, and not in the other? But I believe that these cases should be regarded as truly leuchæmic. The peculiar cause of death in my case is in favour of that view. Death, it would be noticed from the post-mortem report, was brought about at last through a sudden exacerbation of the symptoms, caused by a hæmorrhage into the diseased bile-duct, producing a clot in it which quite choked the duct, whereas the duct had been partly pervious before, as proved by the colour of the stools.

Sixthly and lastly, as to the use of phosphorus in this

disease. I found it was entirely useless in these two cases. The example of apparent benefit which Dr. Wilson Fox brought forward was that which induced me to try the proposed remedy. I had missed the report of Dr. Broadbent's case. But Dr. Fox's case left much to be desired in the way of evidence in favour of the remedial agency of the phosphorus, since only 50 white cells are said to have been present in each microscopic field, whereas in the more doubtful of my two cases 150 were present in each field, and in a case now under my care at Guy's more than 2,000 are computed as present in each field. Thus the leuchæmia itself would appear far from obvious, whilst the report describes the patient as leaving the hospital with the splenic enlargement persisting.

XXVIII.—*A Case of 'Ménière's Disease.'* By Alfred B. Duffin, M.D. *Read February* 25, 1876.

SINCE the earliest descriptions by Ménière and Brown-Séquard, so much information has been obtained respecting the malady known as Ménière's disease, that it would be impossible to embody it in a short communication like the present. I shall therefore confine myself to narrating the leading characters of a case that I have had the opportunity of watching for two years, and to drawing a few inferences from the same.

Looked upon purely from the clinical side, Ménière's own cases seem to embody the following symptoms:—More or less sudden attacks of grave cerebral disturbance—headache, vertigo, fainting, nausea, vomiting. These accompanied and followed by tinitus aurium, impairment of hearing, loss of equilibrium. In all his cases there was inability to stand or walk firmly; the patients actually fell, or would have fallen unless prevented.

W. S., a master builder, æt. about 35, was first seen Jan. 1, 1874.

History.—During the last three years he has suffered from sudden and violent attacks of vertigo, preceded by and associated with intense noises in the ears, and followed by faintness, vomiting, or purging. These attacks have re-

curred at the most irregular intervals, varying from two to fourteen days, or even longer.

Analysis of Attack.—It begins with gentle rumbling noises, which, at the present date (Jan. 1, 1874), are confined to the right ear. These slowly, but steadily, increase till they acquire a great intensity and become complicated with boomings like successive discharges of artillery. As these noises increase vertigo sets in, at first in paroxysmal bursts, each burst lasting a few seconds, then increasing, and at last becoming continuous. Not only is there the sensation of falling, but the man actually staggers, as if drunk, and generally falls at last towards the right. He is compelled to abandon his work and lie down; but even then his vertigo persists. He feels when lying on his right side as if the bed were opening under him, when on his left side as if he was raised from it. During and after the attacks he is deadly pale, and complains of palpitation and præcordial fluttering. During the first fifteen months of his illness these attacks were followed by violent, harassing vomiting, latterly by diarrhœa supervening almost immediately. The duration of the entire fit has varied greatly, from two to as much as twenty-four hours. On no occasion has there been any loss of consciousness. The subjective noises were during the first year of the illness, or thereabout, heard with almost equal severity in either ear. Latterly they have become much more marked in the right one, so that those in the left attract but little attention. They are described as being heard inside the ear, not as coming to him from without. When he closes the right auditory meatus he hears the ordinary street noises (carts, &c.) well with his left. As he walks his footsteps seem to start a rumbling rush of sound. When a fit is at its height the subjective sounds become so intense as completely to obscure all others. If in his tranquil intervals he happens to be lying on his right side and then suddenly to turn over to his left, giddiness immediately comes on.

In other respects his ordinary health is good, and he only complains of a sense of pricking over the right parietal bone. He has never had either epilepsy or syphilis. He was always a temperate man. His heart-sounds, his digestion, his urine, all appear perfectly normal.

On a *physical examination* the sense of hearing with the right ear was found very defective, but not entirely absent. He could just detect the tick of a loud watch when lightly

touching the pinna. The tick of the same watch was well heard eight inches from the left pinna. A tuning-fork could only be heard when placed on the vertex, or on the left parietal bone, and then apparently only in the left ear. Skull vibrations on the right side elicited either no response or only the faintest. Tried at a piano he was found to have a very dim perception of the whole range of notes from the highest to the lowest. He caught them all if they were struck with sufficient force. The otoscopic examination revealed nothing abnormal in either ear, and the appearance of the throat was healthy.

Two days later, on Jan. 3, I endeavoured to compress the right vagus at the angle of the jaw, incited thereto by Dr. Waller's experiments for the relief of unilateral headache. During the whole operation I could feel the carotid beating inside my finger. After half a minute of steady, gentle pressure, the patient felt oddly, became pale, and then went off into a deep faint, with pulse scarcely perceptible at the wrist. The faint lasted about two minutes. He rapidly recovered consciousness. Before the attempt his pulse was 76, soft, moderately full; on recovery, pulse 40, firm and small. Five minutes later pulse 70, softer. Before he became unconscious breathing was slow, laboured and sighing. It was quite tranquil during the faint. No change was observed in the pupils or in the relative coloration of the two sides of the face. As he was fainting off he noticed a kind of hissing sound in his left ear. About a quarter of an hour after recovery he felt nauseated, and presently had a strong desire to go to stool. No right-sided vertigo was excited by this experiment.

At the end of three months, on March 6, 1874, he informed me that he continued to have the same kind of attacks at intervals varying from a week to a month; that the vertigo continued still on each occasion right-sided. The auditory features had not altered. Two days previously booming noises had resumed in the right ear, and with short intermissions had been increasing till 9 A.M. of the morning on which I saw him. At that time, after he had been at his duties for about two hours, intense right-sided vertigo suddenly set in, and he with difficulty saved himself from falling. The attack lasted about ten minutes. It was, as usual, followed by nausea and diarrhœa. There were neither palpitation nor irregularity of the heart. After a lull of half an hour the vertigo resumed, and this time lasted a full hour. For the

first time this was followed by transient numbness down the whole of the right side to the toes. This passed off during the day. For two days subsequently several similar paroxysms ensued, also with right-sided numbness. I unfortunately now lost sight of him till Nov. 26, 1875, or for nearly eighteen months.

He then told me that the fits had become less and less frequent, and also less severe. During the last six months he had only suffered from two attacks, but in these, for the first time, the tendency had been to fall to the left.

More in detail, the boomings in the ear and the subjective buzz have been less intense, but more protracted. The supervention of the vertigo has been more sudden, and during the latter fits quite instantaneously. He felt as if momentarily struck backwards, then that he became generally unsteady for a few seconds, and then that he fell over to the left. A totally new feature was a kind of aura shooting from a fixed point in the hypogastrium to the occiput. This immediately preceded the feeling of being struck backwards. During the last year the duration of the vertiginous paroxysms has been much shortened, and on the last two occasions they did not exceed half a minute. Neither nausea, palpitation, nor diarrhœa has occurred for at least a year. The buzzings are in the right ear, as heretofore. His hearing has materially improved. He can hear a tuning-fork two inches from the right ear, and the ticking of a watch six inches. The tuning-fork is recognised from any point of the skull.

Nov. 20, 1875.—Without any warning or aura he was seized suddenly for the first time with complete loss of consciousness, and fell over to his left side with sufficient force to tear the scalp above the ear. Within half a minute he had entirely gained his consciousness. He did not bite his tongue, nor was he convulsed in the fit. No vertigo or ear signs preceded it. No headache or drowsiness followed it. Was this genuine epilepsy, or a nearer approach to the more apoplectiform mode of onset than had been hitherto noted?

Treatment.—He thinks that valerian and sumbul did him some good, but that all forms of tonic aggravated his attacks. Most good seems to have resulted from belladonna. During the last eight or nine months he had ceased taking physic, as the fits seemed wearing out.

Remarks.—To speak first of the peculiar staggering gait that this man experienced during his paroxysms, and which he could frequently induce by a sudden movement. The

well-known and often corroborated experiments of Flourens on the labyrinths of pigeons go far to fix the anatomical position of these disturbances of equilibrium. It was necessary for the success of these experiments that the membranous semi-circular canals should be divided, and further, as Brown-Séquard puts it, the phenomenon showed one the results of irritation of the auditory nerve from the drawing upon it by the membranous semi-circular canals at the time that we divide them. In the human subject I know of but three illustrative autopsies, all of which are recorded in Knapp's Paper. One was Ménière's tenth case, in which a red plastic substance, a kind of bloody exudation, was found in the semi-circular canals only. The second by Pollitzer, where a fissure of the petrous pyramids extended across the vestibule to the inner wall of the tympanum, the right labyrinth being filled with blood. The third by Voltolini, in which both pyramids were fractured.

Our patient described his walk as being like that of a drunken man, and indeed I had the opportunity to observe it. It was undistinguishable from the walk of a man with cerebellar disease. Dr. Lockhart Clarke has shown that a portion of the auditory nerves goes to the cerebellum; and Dr. Hughlings Jackson suggests that it may be precisely the fascicle connected with the semi-circular canals. Goltz also has assigned different functions to the fascicles of the portio mollis—to the cochlear fascicle that of hearing, to that for the semi-circular canals the regulation of equipoise. 'They are the organs of sense-equilibrium of the head and thence of the whole body.' That sudden changes of position should excite the vertigo, while in some a definite position of the head will check it, is accounted for by Goltz by assuming that the terminations of the nerves in the ampullæ and canals may be excited by pressure or tension. The endolymph would distend those portions of the wall most which lie deepest.

Some experiments recently performed by Dr. Crum-Brown[1] go far to demonstrate the truth of Goltz's hypothesis. Dr. Crum-Brown admits the existence of a sense of rotation. He believes that we are able to determine—1. the axis about which rotation of the head takes place; 2. its direction; 3. its rate. The apparatus which he employs is a stool fixed on a table rotating on a vertical axis. Variations of position of the head of the experimenter render it possible

[1] 'Journal of Anatomy and Physiology,' 1874.

to make the vertical axis of rotation coincide with any straight line through the head. 'If rotation at a uniform angular rate is kept up for some time, the rate appears to the experimenter to be gradually diminishing, and to cease altogether after a time. If the rotation be then stopped, the sensation of rotation about the opposite axis is experienced. If the position of the head be changed after prolonged rotation has been made, the position of the axis of the apparent rotation is changed, retaining always the same position relatively to the head as was occupied by the axis of the real rotation.' 'Rotation of the head about an axis at right angles to the plane of a canal will then produce, on account of the inertia of the liquid, &c., motion of the contents relatively to the vale of the canal, and this may be expected to irritate the terminations of the nerves in the ampullæ.' 'If the uniform rotation is stopped, the contents of the canal will continue to move on, thus causing an apparent rotation in a direction the reverse of that of the original rotation, and this also will die away, owing to friction.'

It will have been noticed that the tendency of the vertigo in this case was to throw the man to the right. During the first year of his illness both ears seem to have been equally affected. When I first saw him the right one was in all auditory respects decidedly the worse. This would not, however, justify the conclusion that the disease of the right semi-circular canals was the cause of the falling to the right. Through the kindness of my colleague, Dr. Ferrier, I have just now in hospital a man with disease probably chiefly in his left labyrinth, but with right vertigo. The evidence of authors on this question cannot at present be accepted as conclusive. Trousseau, indeed, goes as far as to say 'the impulsion of the walk is always towards the side corresponding with the lesion.' But in the case of Dr. Hillairet, which Trousseau quotes in detail, he admits that the tendency was to turn to the side opposed to the lesion. In Knapp's third case also the rotatory movements were executed from the bad to the good side. Messrs. Signol and Vulpian give the history of a cock that was injured by the beak of another cock. Left to right vertigo followed. At death the right petrous bone was necrosed. One great difficulty in obtaining evidence is that in the majority of cases both ears are implicated. Of Ménière's ten cases eight had both ears affected. In two, however (Nos. I. and IX.), the left ear seems only to have been taken, and in these the vertigo was towards the left.

Dr. Crum-Brown proposes the following solution:—

'Each canal has an ampulla at one end only, and there is a physical difference between rotation with the ampulla first and rotation with the ampulla last; and we can easily suppose the action to be such that only one of these rotations will affect the nerve terminations at all. One canal can therefore, on this supposition, be affected by and transmit the sensation of rotation about one axis in one direction only; and for complete perception of rotation about any axis six semi-circular canals are required in three pairs, each pair having its two canals parallel (or in the same plane), with their ampullæ turned opposite ways.'

The man W. S. was observed to be intensely pale during his fit, to suffer from palpitation, and subsequently from vomiting or diarrhœa. Dr. Lockhart Clarke's researches again help us to understand this. The inner auditory nucleus is partly formed out of the nucleus of the vagus, and the nucleus of the vagus forms one continuous column with that of the spinal accessory. The latter is also by many supposed to supply the inhibitory branches of the vagus. Czermak had found injuries of the semi-circular canals to be frequently followed by vomiting. I was anxious to ascertain what effect pressure on the vagus would produce in a man evidently so predisposed to irritation along its track. The result was, that in a few seconds, without in the least interfering with his cerebral blood supply, I struck down his heart's action. Moreover, during the first minute of the time when he was recovering consciousness his heart's rythm was decidedly altered. I must confess that I was so startled at the results of the experiment that I did not care to repeat it. I am informed by Dr. Buzzard that he has met with a very similar accident. While galvanising the sympathetic nerve in the neck, the patient fell suddenly into a deep faint, and recovered with a very slow pulse. Nausea, faintness, vertigo, may be found associated with a variety of diseases of the ear. Trœltsch has observed nausea and vomiting in mild cases of otitis media; even external causes, such as a plug of wax, or syringing the ear with a strong stream, may induce it. Under all these circumstances it is probable that there is increased pressure within the labyrinth.

What point of the auditory nerve is concerned in thus reflexly interfering with the heart's action? Dr. Hughlings Jackson supposes the cochlear division to be related to the centres for the movement of the heart. In the man W. S.,

however, the evidence of cochlear affection was slight. Knapp has laid it down as an axiom that deafness for certain groups of musical sounds is proof positive that the disease is neither limited to the acoustic nerve outside the labyrinth nor to the semi-circular canals and vestibule, but that it extends to the cochlea. W. S. could discern faintly, but distinctly, all the notes of a musical instrument. As Knapp would express it, the range of audition was not contracted. Nevertheless, the symptoms in his vagus track were unusually defined. From the supposed nervous relations between the cochlea and the heart, Dr. Jackson has suggested the ingenious hypothesis that the ear may acquire its perception of the existence of intervals of time from the regularity of the heart's rythm, just as our ideas of space have reference to movements of our locomotor organs. I scarcely think that we need go so far in order to understand how the cochlea may give us our perception of time intervals. Accepting Knapp's hypothesis that Corti's fibres are intended to perceive rythmical vibrations as correct, musical notes are vibrations whose velocity is governed by their pitch, and they all stand in an arithmetical ratio to each other. If all these several graduated velocities can be justly estimated by the cochlea, it stands implied that their intervals are also estimated. It becomes then unnecessary to invoke the heart's rythm for an explanation.

Dr. Buzzard has suggested, in order to explain the paroxysmal character so often seen in these cases, that something like the 'nerve-storm' of migraine swept the medulla oblongata, and set up in the auditory nerve a condition which would be neuralgia in any common sensory nerve, and which showed itself in this peculiar manner.

Lastly, I tested this man's hearing with the tuning-fork. This expedient was, I believe, first suggested by A. Lucæ in the fifth volume of the 'Archiv f. Ohrenheilkunde.' In those cases where skull vibrations have been absent the prognosis of labyrinthine disease has usually been regarded as very formidable. Although the man W. S. could at one time render no account of skull vibrations on the right side of the head, the right ear has made a fair recovery. This recovery of hearing must be regarded as exceptional. In the larger majority of cases in which the vertigo has stopped, absolute deafness has occurred simultaneously.

XXIX.—*A successful Case of Gastro-Enterotomy (artificial Anus in Small Intestine) in a Male, aged* 68. By Charles F. Maunder. *Read March* 10, 1876.

THOMAS S., æt. 68, of sedentary habits, states that he has never had any serious illness, but has been subject to constipation for many years. Probably during the last twenty years, at least, he has been accustomed to take aperient mixtures and pills to overcome this condition. About six weeks ago he passed some blood on two occasions per anum. He has never suffered from piles. Has had occasional attacks of gout in his great toes and elsewhere. He has a reducible inguinal hernia on the left side. He has been a patient of Mr. Gordon Brown for many years, and is believed by him to have a dilated left ventricle. His pulse is generally feeble and intermitting, and his lower extremities and nose are frequently very cold and blue. Had for some months past borborygmi—which have annoyed him much.

Present Illness.—Mr. Gordon Brown's notes are as follows. 'He sent for me on Oct. 23, 1875, and complained of constipation and of great uneasiness in the bowels. I ordered him some mild aperients, which he said relieved him, and the next day he expressed himself as much better.

On Oct. 28 he came to my house late in the evening, and made a similar complaint. I advised him to go home, and examined him in bed. I found the abdomen distended and tympanitic, especially in the centre, while the regions occupied by the colon were markedly flat, as though the large intestine were empty. I could detect a semi-globular, hard, fixed swelling, on deep pressure. The tumour was situated half way between the umbilicus and the antero-superior spine of the left ilium, and was tender to the touch. The patient looked anxious and felt sick. His tongue was furred and brown. I gave him two senna draughts, and he had previously taken a large number of aperient pills. The next morning he had had no relief from his bowels, and was no better. He complained of great pain round about the umbilicus, and towards the right iliac fossa. The pain was paroxysmal, recurred constantly, and was so excessive that each time it came on he felt as if it would be

impossible to bear the next. The pain was followed immediately by a gurgling. Temp. 97·5°; pulse 68, as usual.

Mr. Maunder now saw the case in consultation with me (Oct. 29) at 2 P.M., and on examining the rectum found some hard scybalous masses high up. A very copious enema, containing turpentine and castor-oil, was administered, and this brought away a few lumps of fæces, doubtless those which had been felt. The tongue was furred, brownish, and hiccough had set in.

Evening. Pulse 100, and feeble. Has slept at intervals. The pain in the abdomen was severe, and the tenderness had increased towards the right side. I gave a copious injection of warm water, and this brought away a few more scybalæ.

Oct. 30.—Mr. Maunder again saw the case in the evening, and by the aid of an O'Berne's tube, introduced about sixteen inches, readily injected about five pints of warm water medicated with a little brandy; but without satisfactory result.

Mr. Maunder confirmed my opinion that the large intestine was empty, and that the cause of obstruction was very likely a growth seated in the wall of the bowel; and probably situated somewhere about the lower part of the ilium. The extract of belladonna was ordered to be administered in the shape of suppositories, and this seemed to afford relief to physical pain and give more sleep. Hiccough continues.

31.—No better, though slightly freer from pain. Pulse emptier, and rather quicker. Tongue loaded. Sleeps well. To continue the belladonna suppositories, and to take one drachm of sulphate of magnesia every two hours until an ounce had been taken.

Nov. 1.—Bowels still unrelieved. No flatus. He commenced to-day to vomit copiously greenish, black fluid, directly he took any nourishment. He hiccoughs, especially when lying on his back; less when lying on his left side. The tympanitis has increased. Coils of intestine can be seen through the abdominal wall, lying obliquely. At 7 P.M. Mr. Maunder saw him, and it was agreed to tap the intestine with a fine trocar and cannula. This gave vent to a small quantity of offensive gas. To be fed with nutrient enemata only.

Possible relief by operation was suggested, but declined.

Nov. 2.—11 A.M. Weaker. Anxious sunken countenance. The abdomen is more distended, jutting forward

at the umbilicus—not prominent in the hypochondriac regions. It is tympanitic anteriorly, but dull on either side, especially the left. Pulse 120. Still vomits, and there is no relief from pain. To have an occasional hypodermic injection of morphia. Small hopes are entertained of his recovery.

3.—Has rather gained ground than otherwise, although still constantly sick. The countenance is less shrunken, and the pulse is 116. Temp. normal. The question of operative interference was again entertained; and Dr. Strange Biggs, a relative of the sufferer, having joined us in consultation, it was resolved, after laying all the circumstances connected with such a proceeding fairly and fully before the patient (who consented), to make an artificial anus in the right iliac region.

3.30 P.M. Operation by Mr. Maunder. Dr. Strange Biggs, and Mr. C. F. Hawkins (student of the London Hospital) assisted us. Ether and chloroform were administered. Somewhat below the level of a line drawn between the antero-superior spine of the ilium on the right side and the umbilicus, but nearer the former than the latter, a longitudinal incision was made about the length of the ungual phalanx of the thumb (an inch and a half), dividing, layer by layer, skin, fasciæ, muscles, and lastly peritoneum to the extent only of some three-quarters of an inch. Bowel now presented, but did not protrude in the least. To allow it to do so in order that some superficial sutures might be introduced to fasten it to the margins of the wound, a minute opening was made into it with the point of the scalpel, to set free pent-up gas. This rapidly escaped, of a very offensive character, and as the bowel began to collapse the operator seized it, with the aperture in it, with a pair of forceps, and, drawing the viscus slightly forwards, gave it to Mr. Hawkins to hold while he introduced on each side a fine fishing-gut suture.

At this period some anxiety arose concerning the state of the patient's respiration; and while Dr. Biggs and I were occupied in restoring him by artificial respiration and a brandy-and-water enema, the operator quickly introduced through the margins of the wound and the intestine three silver wires, to be converted hereafter into six sutures. As soon as we were satisfied of the patient's safety, Mr. Maunder opened the bowel in its long axis sufficiently to admit the point of his index finger; and having sought

for, withdrawn and divided each piece of wire as it traversed the intestine, he completed the operation by making three sutures on each side. A large quantity of gas immediately escaped and was soon followed by an abundant flow of rusty black semi-solid fæces.

Immediately after the operation the temperature was found to have dropped 1·5°. Sickness and hiccough ceased.

11 P.M. Has vomited once this evening; expresses himself greatly relieved by the operation. To take small quantities of fluid nourishment and stimulants every hour.

4.—10 A.M. Mr. Mercier (house surgeon of the London Hospital) sat up with the patient during the night. He slept well. The pulse varied from 60 to 100. Took his nourishment freely. Abdomen flattening.

10 P.M. Passed a comfortable day. Tongue cleaner. Temp. 97°; pulse 60. Took his nourishment well and ate some bread and butter. A large quantity of flatus, but very little fæces, escaped to-day.

5.—10 P.M. Mr. Maunder only saw the patient once to-day. Temp. 96·4°. No pain. Copious discharge of fæces. Pulse 70 and stronger, though slightly intermitting when stimulants are not regularly exhibited.

6.—Mr. Price (student of the London Hospital) watched the patient during the night. He passed a fair night. Temp. normal. Took his nourishment well.

7.—Countenance much improved. Doing well.

8.—Mr. Maunder removed the wire sutures.

9.—Dreams a good deal, and is unable to get refreshing sleep. The whole surface of the wound is covered by a superficial slough, and the integument is swollen and brawny. The abdomen is flattened, and a swelling can be distinctly felt to the left of the umbilicus, deep in the abdomen.

10.—Pulse 96. Temperature had risen to 99·4°, and he had gout in both big toes. Ordered colchicum and quinine.

11.—Pulse 96; temp. 99·4°. Toes less inflamed.

12.—Is better, but still dreams a good deal, and has a constant desire to make water, which is albuminous.

14.—Passed a good night after taking half a drachm of bromide of potassium. Feels in better spirits; a slough of cellular tissue from the site of one of the sutures came away yesterday.

16.—Sat up out of bed for an hour to-day, the thirteenth after operation.

19.—Sits up daily. The wound is granulating kindly.

This I painted over with castor-oil to relieve the irritation of which the patient complained from the passage of fæces.

21.—The castor-oil has had the desired effect. Having detected a few scybalæ in the rectum, I removed them by an enema.

Never passed flatus per anum after these were removed. Had done so occasionally before.

23.—Gets up for several hours daily, and walks about the room. The wound is contracting.

Dec. 17.—Mr. Maunder visited the patient to-day. He has gained flesh, feels wonderfully well, and is very cheerful. Says he is in better health than he has been for many months. The wound has greatly contracted, and the artificial anus is inconveniently small. He walks about the house, and is to go out of town on the 20th. Sponge-tents are to be used to dilate the wound.

20.—A sponge-tent was introduced, and the next morning I could insert the second phalanx of the index finger into the bowel. The next night I introduced two sponge-tents. He had slight pain in the wound when they were stretching it, and after eight hours the surrounding integuments were slightly inflamed, but the wound was opened to its former size. I then introduced Barnes' small-sized india-rubber bag, which the patient wore for twenty-four hours. The bowels acted after an enema had been given, and the motion was brownish and semi-solid, so that portions, coming through the wound, broke off and passed down the side of the abdomen. I found that by injecting a pint or so of warm water into the intestine through the abdominal opening the bowel was relieved speedily, and so prevented the inconvenience of the slow passage of fæces. I also had an india-rubber plug made, pear-shaped, about $1\frac{1}{2}$ inches in diameter, with a tube of the same material furnished with a stop-cock and a tap which fitted to a condensing syringe; the ball was introduced into the intestine through the opening in a collapsed condition and then inflated; this prevented any escape of moisture or flatus whilst the patient was sitting up; and at night, whilst in bed, a piece of wood was placed transversely across the pipe to prevent the ball slipping up into the bowel; and though the patient wears this constantly he does not experience any inconvenience from it.

Remarks.—For the moment the history concerning the persistent sluggish nature of the patient's bowels led one to hope that an accumulation of fæces might be the cause of

his discomfort; but the absence of distention in the line of the colon, and the ready injection of five pints of fluid with small material results, quickly dissipated this, and likewise compelled us to accept for the seat of obstruction probably a point not lower in the alimentary canal than the cæcum, possibly higher. The nature of the obstacle was doubtful; but the fact that the anus and rectum were both healthy, that the patient had never hæmorrhoids, and yet on two occasions recently blood had been voided, coupled with the fact that a tumour could be made out with moderate distinctness (the existence of which has been confirmed since the operation), led to the suspicion that a growth, probably malignant in character, had invaded the wall and obstructed the channel of the intestine. Again the absence of great distension and the comparatively early vomiting made it reasonable to consider that the obstruction was not lower than the point already indicated. At the same time the disease must be regarded as chronic in its character and certainly non-inflammatory, the temperature never being above normal; and thus we were able to eliminate as possible causes of obstruction every variety of internal strangulation and ileus. The age of the patient favours the suspicion of malignant disease, while the tenderness in the right iliac region, and more or less generally diffused over the abdomen, was doubtless explained by distension.

With regard to treatment very little was advisable, and that little without much hope of success. Supposing the calibre of the bowel to be narrowed by a growth in its wall, there yet might be a channel along which fluid but not solid fæces could pass; and with that view belladonna was administered to relax any existing muscular spasm, while small doses of sulphate of magnesia were given to liquify the intestinal contents. Vomiting having set in, it was expected that the patient would soon sink (partly from want of nourishment, partly from the effort); he was therefore fed by the bowel alone. This step was certainly beneficial, and seeing that he had rallied from the condition of the previous day, we urged upon him an immediate operation, believing that so favourable an opportunity in a gouty subject with feeble circulation, 68 years of age, would soon pass, probably never to return.

The shock to the system occasionally met with in the surgery of the abdomen was experienced by our patient during the operation, and must be regarded as an element of

danger. Immediately after the operation Mr. Gordon Brown found his temperature 1·5° lower. It would be well, therefore, to anticipate this contretemps by an enema of brandy-and-water, where hæmorrhage is not expected to occur.

The operation that I had pictured to myself was the same as that which I advised in a somewhat similar case when meeting in consultation Dr. Sutton and Mr. McCarthy, in February 1872. Mr. McCarthy performed it most ably, and was rewarded by the recovery of his patient,[1] a male adult, 52 years of age.

This operation consisted in making an artificial anus in the small intestine in the right inguinal region and in the ileum. I say ileum because, in referring to this operation, Trousseau says ('Clinical Medicine,' vol. iv. p. 207, New Sydenham Society), 'that had occurred which is usual when the incision is made in the neighbourhood of the cæcum. The lower end of the ileum was the part struck by the knife. This is an exceedingly important fact; for if the opening be made higher up there will not be so long a portion of intestine between the stomach and the artificial anus for the performance of the digestive functions, and there will be a risk of the patient dying from inanition.' Mr. McCarthy has made a similar and independent observation upon dead subjects, confirming the above remark of Trousseau.

The important principle of practice upon which I strongly insist as being in great measure conducive to safety is—*non-interference with the general contents of the abdomen.*

A knuckle of bowel having been exposed by incision, that alone is to be manipulated, and should it present sufficiently, it is to be stitched to the edges of the wound before being opened, and this is to be effected by fine sutures on either side which do not penetrate all the coats of the bowel. Otherwise the gaseous contents are to be let out as already described. It is most essential that nothing should either enter or escape from the peritoneal cavity, and therefore the utmost care must be had to plug the wound with the protruded bowel. It is a principle in abdominal surgery, upon which I always lay stress (even in lumbar colotomy), to weaken the wall of this cavity to the least necessary degree, with a view to avoid prolapsus or hernia; and for this reason, both in Mr. McCarthy's case and my own, the superficial incision was limited to about one inch and a half, while that in the peritoneum was only half that length.

[1] Med Chir. Trans. vol. lv.

It is worthy of remark that the areolar tissue, exposed by the knife, sloughed; as did also the margin of the bowel so treated; showing how feeble was the power of the patient to resist injury.

In discussing this operation—Gastro-Enterotomy (artificial anus in the small intestine)—I must mention the fact that it is not even alluded to in recent English works on surgery that I have consulted, and probably because it has been regarded as too dangerous to life; a sufficient distinction not having been drawn between the operation now under consideration and *Gastrotomy*, in which *search* is made for the obstruction. The difference is obvious. Another reason why this operation may have been almost ignored is the supposed uncertainty at what distance from the stomach the small intestine would be opened, and early death by inanition (erroneously) expected. In the present instance the excreta are of a brown colour and all but solid.

With the exception of one instance recorded in the St. Thomas's Hospital Reports, 1873, by Mr. Wagstaffe, I can learn from inquiries among professional brethren of no other instance of recovery in the history of British surgery. My belief is that success will lie, as I have already remarked, in non-interference with the general contents of the abdomen.

If this precaution be taken, many valuable adult lives will in the future be prolonged.

In two instances only have I recommended this operation, and in both it has been successfully performed.

XXX.—*Aneurism of the Arch of the Aorta, with Obstruction to the passage of Blood through the left Carotid and Sub-clavian Arteries. Spontaneous Cure of the Aneurism nearly completed. Death from Empyema.* By Edward Headlam Greenhow, M.D. *Read March* 10, 1876.

Louisa W., æt. 45, married, and a needlewoman by occupation, was admitted into the Middlesex Hospital under my care on Nov. 22, 1875.

Previous History.—There was a distinct history of tendency to pulmonary disease in the patient's family; her father having died, at the age of 45, of inflammation of the lungs, and her mother, at the age of 57, of phthisis. Patient

herself had always been subject to colds and coughs, though she had never been laid up by them until two years before her admission; from which time she had never been free from cough and shortness of breath. She had also suffered from palpitation of the heart for about four years, and had considered herself as out of health during the whole of that period.

Present Illness.—About twelve weeks previous to her admission she was suddenly seized with rigors, followed by pain in the left side of the chest, dyspnœa and cough, and she had been from that time confined to the house.

State on Admission.—Patient was a somewhat stout, pale, flabby, woman; breathing laboured; respirations 32. She lay constantly on her left side; and, on being hastily moved by the nurse on to the other side, she gasped for breath, and appeared to be dying, until revived by brandy and a change of position. She complained of pain in the left side of the chest, both before and behind; and, also, of pain in the epigastrium, which was aggravated after eating. Pulse, 130; temp. 100·7°; urine, sp. gr. 1025, acid, free from albumen, turbid with lithates.

On inspection of the anterior walls of the chest, the left side appeared larger than the right, and did not expand at all during inspiration. Posteriorly also the left side appeared to bulge, and the intercostal grooves were almost obliterated. There was considerable œdema of the integuments of the left side of the chest, both in front and behind, and the surface was somewhat tender on pressure and on percussion. The left side was everywhere dull on percussion, though less completely so over a small area just below the spine of the left scapula. At this point feeble vocal vibration could be felt, and bronchial breathing was heard here and also just below the outer angle of the left clavicle. With these exceptions no breathing was heard in the left lung, and no vocal vibration could be felt over any part of the left side of the chest. Over the right side the percussion-resonance was normal, the breath-sounds were a little exaggerated, and there was moist crepitation in the base of the lower lobe of the lung.

The heart's apex was felt beating at the middle of the lower third of the sternum, but its impulse was felt all over the left side of the thorax both before and behind, and especially over the second and third intercostal spaces, where it was very pronounced, and communicated to the hand the

impression of being conveyed through a solid body. The heart-sounds were clean and free from murmur, neither was any murmur heard over the seat of impulse below the left clavicle. No pulse could be detected in the left sub-clavian, brachial, or radial arteries, but pulsation was felt in the left external carotid, and the heart's impulse was propagated very distinctly to the space just above the upper end of the sternum, and also above the left clavicle. The pupils were equal; the voice was unchanged; and there was no difficulty in swallowing. The left arm was not swollen. There was frequent cough, and the patient raised a considerable quantity of thick and rather tenacious muco-purulent sputum, which was occasionally streaked with blood.

Progress of Case.—On Dec. 3 the left breast was found to be much enlarged, red and painful, and it presented two dark purple patches, one above and the other below the nipple. These were freely incised, with the effect of giving temporary relief. The patient died Dec. 5.

Post-mortem Examination.—Body well nourished. Left mamma enlarged; in several places denuded of cuticle, and presenting a bluish-black appearance; on being cut into, it showed inflammatory infiltration. When the breast was removed, the left pectoralis major muscle was seen to be bulged forwards and its fibres to be discoloured. This bulging was subsequently ascertained to be due to an abscess situated outside the chest wall, and communicating with the pleural cavity through the third intercostal space. The abdominal viscera having been removed, the left pleural sac was tapped through the diaphragm, and nearly three pints of opaque offensive pus were evacuated. Pressure on the pectoral muscle increased the flow of pus. The rib-cartilages and sternum were then carefully removed, exposing the left pleural cavity, lined with a thick, soft coating of opaque lymph and pus. The pus had burrowed through the chest walls in two places; one, as already mentioned, in the third intercostal space underneath the mamma, the other in the eighth intercostal space in the axilla. The lung lay at the back of the cavity against the spine, and was also bound down by firm adhesions to the chest wall.

The upper part of the thoracic cavity was occupied by a large, solid, aneurismal tumour, which was adherent to the sternum, and to the left lung, and had been cut into in the process of raising the sternum, showing the interior of the sac, apparently filled by compact layers of fibrine. This

aneurism, which was sacculated, sprang from the summit of the arch of the aorta, between the left sub-clavian and carotid arteries, and pressed forwards to the sternum, and laterally into both pleural cavities; the left cavity being the most encroached upon. The aneurismal sac was ovoidal in shape, and measured 11 inches from right to left, and 10 inches from front to back; it communicated with the aorta by a very wide mouth, and was almost completely filled with laminated decolorized fibrine. The innominate veins were stretched over the sac; posteriorly the trachea and œsophagus were adherent to the sac, but were not compressed by it. On the left the aneurism was adherent to the lung from apex to root.

The great vessels arose as follows:—The innominate artery was given off from the arch, before the commencement of the aneurism, and was patent. An inch to the left of the innominate artery was the left carotid, the channel of which was completely obliterated, the trunk of the vessel being buried in the wall of the sac for the distance of more than an inch. The left sub-clavian artery was distant three and three-quarter inches from the carotid; and the beginning of its course was almost lost in the wall of the aneurism; the thyroid axis being given off close to the aneurismal sac. A bristle could be passed, though with difficulty, through the severed sub-clavian trunk into the aorta, close to the bend of the arch. Lastly, the aneurism itself projected over the left extremity of the arch.

Between the compact mass of fibrine which filled the aneurismal sac and the lower wall of the aorta, a channel was found, large enough at its entrance to admit the thumb, but opening out in the sac of the aneurism into a cavity capable of holding a hen's egg. This cavity was bounded in front by the dense mass of laminated fibrine cut in raising the sternum; but its posterior wall, though also formed in part of laminated fibrine, was much thinner.

The ascending aorta was dilated, and its lining membrane was covered by irregular prominences and depressions, mostly atheromatous, and some of them calcified. Similar, though less advanced, changes were also found in the descending aorta.

The heart was not enlarged; its cavities were relaxed and half full of recent blood-clot. The aortic valves were thickened along the lines of apposition.

The left lung was compressed, and its tissue was friable

and riddled throughout with small ragged cavities containing pus.

The right lung was healthy and non-adherent. The abdominal viscera were all healthy.

Remarks.—On the patient's admission into hospital there was no difficulty in deciding that there was empyema of the left pleural sac, and the patient was accordingly tapped twice, but without success, the trochar having evidently on both occasions penetrated into the left lung, at the part where it was bound down to the parietes of the chest.

But it was certain also that there was a tumour in the chest. At first I was inclined to believe that it might be a cancerous growth, originating in the posterior mediastinum, and invading the left pleural sac. Subsequently, however, I arrived at the conclusion that it was an aneurism of the arch of the aorta; being mainly led to form this opinion by the fact of the absence of all pulsation in the left radial artery.

Although, as I have noted, a small bristle could be passed through the sub-clavian artery into the aneurismal sac, it is probable that the pressure of the consolidated aneurism effectually prevented the passage of any blood into that vessel during the latter period of life. Indeed, I conclude that the obliteration of the canal of the carotid artery, and the narrowing of that of the sub-clavian, were alike due to the compression of these vessels by the aneurismal tumour, in the wall of which they were for some distance actually buried. The stretching and displacement of these vessels by the growing aneurism would probably, at an early period, impede the circulation through them, and this impediment to the flow of blood out of the aneurism would favour the deposit of laminated clot in its cavity. The partial solidification of the tumour by means of this deposit would again intensify the pressure exerted by it upon the vessels, until it eventually sufficed to close their canals, and thus led to the gradual formation of the large mass of laminated fibrine which had nearly filled up the cavity of the sac.

I have been induced to bring this case before the Society on account of the important bearing which its facts appear to me to have upon the question of the surgical treatment of aneurism of the arch of the aorta. Many years ago Brasdor proposed to cure aneurisms, which were so situated that it was impossible to place a ligature upon the main artery between the heart and the aneurism, by tying the artery on the distal side of the aneurism. It does not appear whether

he performed any cures by this method, but it will be in the recollection of members of the Clinical Society that, in the year 1872, Mr. Christopher Heath exhibited here a patient, upon whom he had tied the left carotid artery for aneurism of the ascending portion and arch of the aorta; and that, in the following year, he again exhibited the same patient, in so good a state of health that he was able to work as an agricultural labourer without inconvenience; the prominent symptoms caused by the aneurism having entirely disappeared.

I venture to think that the case I have related, showing spontaneous cure of the aneurism, almost completed, in connection with occlusion of the two distal vessels nearest to the sac, affords strong corroborative support to this plan of treatment for the cure of thoracic aneurisms.

XXXI.—*On a Case of Distal Ligature of the left Carotid Artery for Aortic Aneurism.* By T. Holmes. *Read March* 10, 1876.

THE case which I am about to bring before the Society is one of some interest as bearing on the treatment of aortic aneurism, and especially as an example of an operation hitherto little practised, and both the indications for which, and its real effect on the disease, are very imperfectly understood.

The distal ligature of an artery for aneurism offers the most distinct prospect of success when it is performed on an artery which is the only vessel opening out of the aneurism, and when the ligature is so placed that no branch of the vessel intervenes between the sac and the point of deligation. This was pointed out long ago by Hodgson in discussing Brasdor's operation, and is universally admitted. But unfortunately there seems no place in the body where the necessary conditions can be realised, unless it be in the case of an aneurism of the carotid artery at the root of the neck; and I must allow that I have as yet searched in vain for anatomical proof of the existence of such an aneurism,* though

* I mean that I am not aware of the existence of a preparation of aneurism affecting the carotid artery only and situated low enough down to allow of the application of the distal ligature, the innominate artery and aorta being healthy. If there is any such preparation, or an authentic drawing of any such, I should be very grateful for a reference to it.

the symptoms of some of the recorded cases appear to justify the diagnosis of such an affection which was arrived at during life. However this may be, if we were to restrict the use of the distal ligature to cases of aneurism of the root of the carotid artery only, its range of application would be limited indeed. Mr. Wardrop endeavoured to extend the utility of the distal operation by applying it to cases of innominate aneurism; believing that, by tying the carotid and the third part of the subclavian artery (while the branches from the first part of that artery are left to carry on the circulation), the tumour would be deprived of two-thirds of its blood, and that thus an opportunity would be afforded for consolidation to go on in part at least of the sac. Dr. Cockle more recently has discussed the question of the propriety of extending the province of the distal ligature to aneurisms known to be aortic, and his interesting paper in the 'Lancet' (March 27 and April 10, 1869) is no doubt familar to most members of this Society. It refers to several very interesting post-mortem specimens, showing the curative effect in aortic aneurism of obliteration of the carotid artery, and also to some cases now well known, under the care of Tillanus, Rigen, Montgomery, and Colson, in which benefit seems to have resulted from the ligature of the carotid in aneurisms which were really aortic, but which had been diagnosed during life as carotid. I believe this was the first distinct recommendation of this operation, though hints of the advisability of such a proceeding may possibly be found in Velpeau and other authors. The first case in which this operation was employed in an aneurism known to be aortic was Mr. Heath's, reported in our 'Transactions,' vol. v. p. 183, by Dr. Cockle, and the after progress of which was again reported by Mr. Heath in vol. vi. p. 127. The operation in that case was performed on Feb. 26, 1872, and the patient obtained most striking relief, being able to resume his work as an agricultural labourer, and being alive at the present time, though the tumour is rapidly advancing. My case was a much more unpromising one than Mr. Heath's, the bruit being extremely loud, the tumour apparently making rapid progress, and the lung being much pressed upon. But the operation produced indubitable and very marked relief to the symptoms, and has undoubtedly been the means of preserving the patient's life up to the present time, though the disease is not cured, nor as far as I can see is it likely to be so; but the patient, who on her admission more than a year ago seemed hardly likely

to live more than a few days or weeks, is now relieved from all symptoms causing immediate apprehension, and the tumour is very much smaller, and evidently presses much less on the air-passages. This will appear clearly I hope from the subjoined notes.

Allowing, then, that in both Mr. Heath's case and my own the patient owed the prolongation of life and relief from urgent symptoms to the carrying out of Dr. Cockle's suggestion, the next question is as to the indications for the operation; and this of course depends, in the first place, on the ideas we have of the effect of the distal ligature. I confess that I can form no clear idea of the possibility of relief from the distal operation unless that relief be produced in the same manner as we know it sometimes is in cases of embolism. We know that embolic clots sometimes lodge in the carotid artery, and produce the total obliteration of the vessel from one end to the other. We know also that this is likely to be followed by the obliteration of that portion of the aneurismal tumour through which the carotid circulation used to pass; and we have at any rate one example of innominate aneurism in which such obliteration was followed by the subsidence of all symptoms of the disease, though a small channel remained in the aneurismal tumour, through which the circulation in the subclavian artery was carried on,* while there is another specimen of innominate aneurism in which the obliteration of the first part of the subclavian artery produced a similar effect.† To complete the analogy between such cases and the distal operation there is the well-known case of Dr. Wright, of Montreal, in which the anatomical condition of the tumour after the distal ligature of the carotid was found exactly to correspond to that which follows the obliteration of the same vessel from embolism.‡

It is in this way that I have endeavoured to explain § the favourable influence on the disease which undoubtedly is sometimes produced by the distal ligature in cases of innominate aneurism; and if this be not the true explanation, at any rate I think I may say that no other has as yet been advanced which will bear examination. Wardrop's idea, that the diminution of the tumour depended on the reduction in

* Dr. Ogle's case in Path. Soc. Trans., vol. ix. p. 167; more accurately described in the 'Lancet,' vol. i., 1872, p. 818.

† Dr. H. Davis's case, London Hosp. Report, vol. i. p. 1; 'Lancet,' vol. i. 1872, p. 819.

‡ 'Lancet,' vol. ii., 1872, p. 70.

§ See the lectures in the 'Lancet,' referred to in the former notes.

the quantity of blood circulating through the sac, and that this is in the proportion which the size of the vessels tied bears to that of those left patent, will not bear a moment's reflection, since it leaves out of account the enlargement which the anastomosing channels undergo, an enlargement which Wardrop's own observations prove to commence almost (if not absolutely) instantaneously after the operation. If my view is correct, it would amount to this: There are some cases in which after ligature of the carotid artery the whole tube of that vessel is obliterated, and the artery converted into a fibrous cord from one end to the other. These cases form probably the great majority of those in which the carotid artery is successfully tied. In such cases the coagulation will in all probability extend into the aneurismal sac, and all that portion of the sac through which the carotid circulation used to pass will become solidified. There are again other cases of successful ligature of an artery in which, from some cause hitherto unexplained, only the precise point ligatured becomes obliterated, all the rest of the vessel remaining open.* In such cases it may be questioned whether any benefit will follow on the distal operation, and certainly in my case of distal ligature for innominate aneurism (from which the second preparation referred to in the footnote was taken) none did follow. But in ordinary cases it may be confidently anticipated that, if the carotid can be tied with success, the whole vessel will be obstructed, and the carotid portion of the sac along with it, and this being premised, the indications for the distal ligature of the carotid in innominate aneurism become tolerably plain. It should be recommended in cases where the tumour is observed to be extending towards the trachea, or where the increasing pressure on the trachea leads irresistibly to the conclusion that it is so extending, and in cases where pressure on the carotid artery causes so much collapse of the tumour as to show that its carotid portion forms a large part of the aneurism.

The same considerations appear to me applicable to aortic aneurism also, though from the position and relations of aortic aneurism the difficulties in applying them become in practice very considerable. We all know how difficult is the mere diagnosis of the existence of aortic aneurism in some

* This condition is illustrated in the case of the femoral artery (tied some months before death) by a preparation figured in my work 'On the Principles and Practice of Surgery,' p. 86, and in the case of the carotid (tied eight weeks before death) by another preparation figured on p. 89 of the same book.

cases, and still more often its distinction from carotid or innominate aneurism. Much more difficult must be the diagnosis of the preponderance of one portion of the tumour over another, or the discrimination of its growth in any precise direction. And undoubtedly these difficulties, as well as a consideration of the grave constitutional weaknesses with which aortic aneurism is usually associated, are powerful motives to deter the surgeon from any operative interference. This conclusion is adopted by all judicious writers on aortic aneurism, and is by no means inconsistent with an acquiescence in Dr. Cockle's suggestion, nay, is expressly enforced in Dr. Cockle's own paper.* But when under the influence of rest and restricted diet, of medical treatment and (if the circumstances indicate it) occasional distal pressure on the carotid, no further improvement is obtainable, or when, as in the instance before us, the tumour appears to be making its way up the neck, the question of the employment of the distal ligature occurs; and if in such cases the surgeon sees enough to warrant him in the opinion that the growth of the tumour is mainly in the direction of the left carotid artery, I think he is justified in tying that artery—though I allow that the operation must be regarded as experimental only. I would say the same with respect to the left subclavian, were it possible without extreme danger to reach a point in that artery on the proximal side of its large branches; but this, from the anatomical relations of the artery, seems impossible, and the same observation applies to the innominate. When the aneurism is judged to be partly innominate and is extending up the right side of the neck, the same observations will apply to the ligature of the right carotid as to that of the left artery in aortic aneurism.

The shape of an aneurism has in my opinion a very material influence on the success of operations undertaken for its cure; the more the tumour approaches to the truly 'fusiform' condition, the more difficult is it to obtain a cure. Even in the arteries of the limbs no measure short of the ligature will as a general rule suffice for the cure of a fusiform aneurism; and in the aorta, where the circulation cannot be turned into other channels, nothing can be hoped from treatment except so to line the sac with coagulum that its further extension and its rupture may be prevented. But these fusiform dilatations have often prolongations growing out of them like buds; and it may be this portion of the

* 'Lancet,' 1869, vol. i. p. 489.

sac which is extending, producing symptoms of irritation by its pressure on important organs, and threatening death either by such pressure or by its further growth; and if we can stop that growth and procure the consolidation of the saccular prolongation by the ligature of the artery along which it extends, the life of the patient may be indefinitely prolonged.

These were the indications on which I relied in the subjoined case. I may add that the partial obliteration of the branches of the left subclavian seemed to me a favourable circumstance for the distal ligature of the carotid, and the gradual and somewhat intermitting diminution of the thrill which followed on the operation seemed to me exactly what might be anticipated as the result of coagulation extending slowly from the artery into the sac, and probably often intermitting or even temporarily receding.

I append notes of the case, taken from my clinical case-books.

The patient, Esther S., a young woman only 21 years of age, single, was admitted into St. George's Hospital under Dr. Dickinson, and transferred to Mr. Holmes' care on Oct. 8, 1874. Her father had died of consumption, her mother is alive and in good health, as are all her brothers and sisters. She has been 'very delicate from her birth,' and about twelve months previously had had a severe attack of rheumatic fever, since which she has never been perfectly free from tightness in the chest and palpitation. She has never had any traumatic injury, and there is no suspicion of syphilis.

On examination there was found a large aneurismal tumour connected with the transverse portion of the arch of the aorta, and chiefly, as it seemed, towards its terminal part. A very loud harsh bruit was heard over the whole chest, and was in fact audible at some distance from the body, and there was a considerable thrill in the first two intercostal spaces and root of the neck on the left side. The apex of the heart was somewhat lower than natural. No morbid sound was made out as connected with the valves, but it was impossible to come to any very decided opinion on this point, so much were the valvular sounds obscured by the aneurismal bruit. She suffered grievously from dyspnœa always, and syncope at times, had considerable bronchitis, and frequently spat blood. There was a good deal of pain between the shoulders. The pulse at the right wrist was natural, 60 in the minute. No

pulse could be detected at the left wrist, nor in any of the arteries of the left upper extremity, from the axillary downwards. It was difficult to distinguish the pulsation of the tumour from that of the subclavian, but the impression was that the left subclavian was plugged at or near its origin from the aneurism.

It would require too much space to go minutely into the details of treatment. On Dec. 8 the treatment by rest and restricted diet, on Mr. Joliffe Tufnell's plan, was commenced, and carried out strictly for some months. She was confined constantly to the recumbent position, and allowed 4 ozs. of meat, 4 ozs. of bread, and half a pint of milk per diem, a chloral draught being given at night, and some confection of senna when necessary. On Dec. 21 four drops of tinct. of digitalis three times a day was ordered. Under this treatment her general condition improved considerably, the pain and dyspnœa became less, and the bronchitis almost disappeared. On Jan. 7 it is noted for the first time that the pulsation of the left brachial could be distinctly felt, though there was no pulse at the wrist, and from this time pulsation could occasionally be felt in the arteries of the upper limb, but in a very capricious and irregular way. Generally the pulsation of the brachial was very distinct, and that of the ulnar artery also very perceptible, but less strong than in the brachial. The radial pulse was only rarely to be felt, and always weaker than the ulnar. The conclusion come to was that the loss of pulse in these arteries was due partly to clot lodged in them at various parts, and partly to pressure from the aneurism on the main trunk, and that the return of pulsation proved that this pressure was diminishing from decrease in the size of the tumour.

On Feb. 9, after the treatment above described had been carried on for two months, trial was made of the injection of ergotine occasionally into the neighbourhood of the sac; but it seemed to do more harm than good, from pain and excitement. On March 9 tinct. aconite (♏ iij) was substituted for the digitalis, the rest of the treatment being strictly carried out. After lying in bed for six months she became urgent to be allowed to get up; and as she had much improved, the thrill being now limited to the first intercostal space and root of the neck and much less violent, and the chest symptoms being much mitigated, she was allowed to do so—a somewhat more liberal diet being permitted—and in August she left St. George's for the Convalescent Hospital at Wimbledon,

where she remained until Oct. 1875, during which time she took a very gentle amount of exercise, and had ordinary diet, but was not so well as before.

Oct. 6, 1875.—Re-admitted into hospital.

7.—Thrill distinct, both above the clavicle and on front of the chest from the clavicle to the second rib, and bounded by right border of sternum. Pulsation distinct over same area. Pulsation of left radial obscure.

21.—Ligature of left common carotid, above the omo-hyoid. There was no *immediate* difference in the size or bruit of the aneurism. Left side of the face perceptibly colder than right in the evening.

23.—Very little constitutional disturbance. Voice hoarse, and throat sore. Pulsation and bruit are decidedly *less distinct.*

25.—Pulsation and bruit *slightly increased.*

28.—Pulsation and bruit *rather less.* Left radial pulse not perceptible. Ulnar can be felt.

Nov. 2.—Pulsation and bruit still *gradually decreasing.* Sutures removed from wound, which is almost closed.

4.—Pulsation and thrill *still less.*

8.—No change. Bruit can be distinctly heard in axilla, and on anterior aspect of chest as low down as lower border of thorax.

17.—Bruit more confined in area; also harsher in sound, and apparently nearer to the surface. No pulsation in left temporal.

22.—Thrill diminished in area of surface. Pulsation much less marked. Occasional pulsation in left radial.

25.—Pulsation increases at times without any apparent cause.

Dec. 10.—Amount of pulsation varies considerably on the whole.

14.—Ordered plumbi acet. gr. ij; opii. gr. $\frac{1}{4}$ t. d.

21.—There is still considerable bruit.

Jan. 7, 1876.—Pulsation still perceptible, though much less; that in radial imperceptible; brachial and ulnar perceptible.

19.—Pulsation above clavicle rather more perceptible. Concavity instead of convexity over second intercostal space. Bruit not quite so limited as it was.

26.—Pulsation above clavicle more distinct. Bruit very marked and more diffused. The acetate of lead discontinued.

31.—Bruit not extending quite so low down; more distinct above clavicle, where pulsation also distinct.

Feb. 4.—Thrill *decidedly less and less superficial* in character. Patient was put on iodide of potass. (gr. v).

6.—Aneurism in same favourable condition.

14.—Not much alteration. If anything, rather more distinct thrill.

March 3.—No change in anuerism. Patient complains of headache, running at the eyes, &c. Iodide of potass. discontinued.

4.—Perchloride of iron substituted. Patient feeling better. No change in aneurism.

She still continued to improve, and was again discharged to Wimbledon in April 1876.

XXXII.—*Case of Excision of the Ankle. Use of Linhart's Chisel.* By T. Holmes. *Read March* 24, 1876.

CATHERINE B., æt. 45, married, admitted Nov. 24, 1875. About three years ago left ankle first began to swell. Not much pain. Treated for rheumatism. About six months ago ankle much swollen, and very painful. Went to West London Hospital, and remained there four months. Was discharged about six weeks ago. Swelling very shortly returned, with some pain. Came to St. George's Hospital.

Nov. 24, 1875.—Admitted. Not very much swelling nor very much pain. Ankle was treated by perfect rest, with Goulard lotion, without effect.

Jan. 17, 1876.—Incision made over front of joint. Astragalus was found diseased, and end of tibia eroded. Incision followed by sharp attack of traumatic fever. Temperature going up to 103°, pulse to 140. Passed off in a few days.

Jan. 27, 1876.—Operation performed. Incision from behind, the external malleolus to front of foot, and parts dissected up, Esmarch's bandage having been previously applied. (The whole operation was performed on the antiseptic principle, the instruments, &c. being soaked in carbolic acid, and a carbolic spray playing continuously on the parts.) Astragalus removed with elevator and lion forceps. Lower ends of tibia and fibula then cut off with Linhart's chisel. A good deal of oozing followed removal of Esmarch's bandage. Cavity mopped out with 20-grain solution of chloride of zinc.

Stuffed with sponges, and sutures left unfastened for three hours, during which time it was irrigated with carbolic acid. Sponges then removed, sutures fastened, and wound dressed antiseptically. Green protective over wound, covered with carbolized gauze, surrounded with macintosh, and bandaged to an Assilini's box. There was found to be slight erosion of the ends of the tibia and fibula. Upper part of astragalus a good deal diseased. Disease not extending into surrounding joints.

Feb. 4.—Wound dressed every other day. Looking well and quiet. Temperature high. Pulse rapid.

13.—Wound looking irritated and inflamed, with a good deal of discharge. Carbolic dressing therefore discontinued, and simple Goulard lotion, covered with oakum, substituted.

14.—Some bagging on inner side of ankle. Incision made, and pus evacuated.

15.—Wound looking much healthier. Temperature going down. Pulse quieter.

21.—Wound healing rapidly by granulation. Patient's health improved.

28.—Wound still healing nicely.

March 4.—Some slight amount of consolidation between the bones, patient being able to raise the foot without assistance. Wound looking well.

9.—Going on well.

24.—The wound of the operation is now almost cicatrised. There is still a little suppuration on the inside of the foot, which has required two small punctures.

Remarks.—This case was brought forward chiefly to illustrate the advantages which may be derived, in some cases of excision and other operations on bones, from the use of the chisel devised by Herr Linhart, of Würzburg. This is a stout chisel with an oblique edge, having a thick back, on which is a projecting ridge to catch the hammer, by which the weapon is driven through the bone. The edge is pressed firmly into the bone, in the direction in which the incision through the bone is to run, and then successive blows of the hammer drive it on with an equable motion through the bone in the same straight line as that formed by its edge. If the depth of the first incision is insufficient, it can be easily deepened by a second, and if an angular incision be required, the chisel can be stopped at the proper place, and reapplied in the required direction. One of its great advantages is that it never splinters, and another is that it requires no

dissection around the bone to be removed. Thus, in the present instance, it was quite easy to remove the whole of the bones of the ankle through a single angular incision on the outer side. In operations for the removal of sequestra, operations on the jaws, and excisions of the hip, elbow, ankle, and others, it will form a most valuable addition to the surgeon's stock of instruments. It requires, however, a moderately firm basis for the bone to be divided, and may not prove always sufficiently powerful to deal with very much solidified bone.

XXXIII.—*Case of Cleft Palate. Treatment by Operation and Obturator.* By A. T. Norton. *Read March* 24, 1876.

Clara B., æt. 13, was the subject of cleft palate. The cleft was a central triangular space, extending in front up to alveolar border. Very little of the horizontal plates of the palate-bones had been developed. The soft palate was likewise cleft in the centre, but owing to the breadth of the cleft the two halves of the uvula could barely be made to approximate. The operation, at which I was assisted by Mr. Haynes Walton and Mr. Francis Mason, consisted (1) of paring the edges of the cleft, and (2) of loosening the tissues around so as to enable the denuded surfaces to be approximated. In paring the edges, care was taken to cut the surface obliquely, so as to obtain as much denuded surface as possible for approximation. If only the margin is denuded, in such cases it is more than probable that when the sutures are applied the raw surface is not brought into contact with the opposing raw surface, but probably with the mucous membrane, and as a result no union takes place, and the operation is a failure. The loosening of the tissues around was a more difficult matter. The knife was carried in a line from before backwards a little above the alveoli, and a chisel was next applied in order to separate the thick mucuous membrane lining the small remaining portion of the hard palate. By this means not only was the lining membrane of the roof of the mouth freed, but the soft palate was separated from the horizontal plate of the palate-bone, and was therefore capable of being stretched without great tension sufficiently to meet the fellow of the opposite side.

The sutures were now applied in the ordinary manner, care being taken to include a sufficiently large portion of the tissue to obtain strong hold; to carry the needle to the mucous membrane on the deeper surface, but not to puncture it so that no mucous membrane should be made to face the denuded surface; and lastly, to draw the sutures sufficiently tight to approximate the surfaces, but not to cut through the soft tissue in too short a space of time, for it must be remembered that in the soft palate a good deal of swelling takes place when sutures are applied. Union took place in the uvula and soft palate, and in a portion of the tissue covering the hard palate, but in the front of the mouth there yet remained a space $\frac{5}{8}$-inch in length by $\frac{1}{2}$-inch in breadth. With this aperture in the hard palate the voice was in noway improved, so that it became necessary to apply a false palate to the roof of the mouth, in order to close the communication between the mouth and the nose. In this way some slight improvement took place in the power of speech, but still it was evident that the air which should be made use of in articulation passed into the nose behind the soft palate. In fact, the uvula, which now formed a curtain stretched across between the fauces, though apparently flaccid, was not capable of undergoing a sufficient amount of movement to close with the pharynx during articulation, and consequently many articular sounds were lost.

In order to overcome this difficulty I obtained the services of Mr. Sewill, who made for me an obturator according to the following plan:—A small plate was made to accurately fit the roof of the mouth, and to extend into the floor of the nose, with a slight flexible rim to catch upon the floor of the nose. From this rim a false uvula of considerable breadth, and composed of flexible vulcanised indiarubber, protruded backwards from the nose into the pharynx. When the child attempted to speak, the pharynx was brought forward into contact with the artificial uvula, and so entirely shut off the communication with the nose.

Immediately after the obturator was applied, the patient could articulate the letters *s* and *z* to perfection— sounds which she was quite unable to make before.

Concerning the manufacture of the obturator, the first which was applied fitted accurately the aperture communicating with the nose, and consequently movements of the muscles of the palate caused compression of those muscles and an annoying aching pain; so it was found necessary to

have that part which connected the mouth-plate with the nasal rim made slightly smaller in size than the aperture to which it was fitted.

The points to be particularly noticed in this case are:—

1. It was impossible to perform the operation of Sir William Fergusson and Mr. Mason—namely, to bring the bones together—because there was so little development of the palatine processes and of the horizontal plates of the palate-bones. Consequently it was impossible to successfully close the aperture in the hard palate by operation.

2. When the soft palate had united, and the aperture in the hard palate was closed by a plate, the voice was but little improved, though certainly the improvement in swallowing was a great comfort to the patient. This was remedied by the apparatus above described, but I do not wish to convey the idea that the articulation was perfect even then. The question here arises whether any operation can be performed so as to render the false uvula unnecessary. I consider that cases are numerous in which such a uvula—or rather palate, for the piece was broader than a uvula—will be found to be of the greatest service in improving the voice and articulation. I know that the palate, when the cleft has been united by operation, may be slit near to the tonsil, so as to form a broad and movable uvula; but then it is not raised or drawn backwards by the muscles any more than if it had not been cut, and air will always find its way behind such a uvula into the nose. It is to remedy this that I have applied a soft flexible false uvula falling behind the soft palate, and so actually coming in contact with the pharynx and closing the aperture into the nose during the formation of certain sounds, for when forming those sounds the pharynx is brought forward to meet the palate. The natural forward movement of the pharynx is, however, limited, and though it may not be able to approximate itself to the palate, which, after these operations becomes tense and immovable, yet the space between the two can be sufficiently reduced by the flexible vulcanised indiarubber, as above described.

XXXIV.—*A Case of Headache and Double Optic Neuritis with almost complete Amaurosis, followed by Recovery with partial Restoration of Sight.* By James F. Goodhart, M.D., and Charles Higgens. *Read March* 24, 1876.

ADA P., æt. 21, a pupil teacher in one of the School-board Schools, was attacked with severe headache and vomiting on Dec. 21, 1874.

The following was obtained partly from the patient's mother—a very reliable authority—and who has had considerable experience as a nurse; partly from the patient herself.

The mother is a healthy woman, but the father died of cough; one sister died of consumption; and one other sister, still living, has scars of old strumous abscesses in her neck.

No cause can be assigned for the illness; but when asked leading questions on the point, it was elicited that some months before she had received a severe blow from a stone on the right side of the head, near the temple, which had stunned her temporarily, and from which she had suffered pain for some days after. She, however, did not attribute anything to this, as she felt quite well in the subsequent interval.

She has always been a very intelligent girl, with great desire for self-improvement. This has led to considerable reading on her part, and latterly she has been working additionally hard for an examination both for her pupils and herself.

She first fell ill with a headache on Dec, 10, eleven days before the onset of severe symptoms. This continued more or less all the week; but she continued to work till Dec. 20, when she came home with a sore throat. This got better, and on Dec. 21 she went out for a walk, thinking the air might revive her. It was on the same night that she awoke with intense headache all round the head, and she soon began to vomit. The next day, being no better, she attended one of the metropolitan hospitals as an out-patient, where she was told she had taken cold, and would soon be better. But she continued to have paroxysms of

headache, which she described as 'fearful,' and the vomiting was constant after everything she took.

In this condition I was asked to see her on the afternoon of Dec. 23. She then complained of intense headache, which was really agonizing, not affecting any particular spot, but occurring over the whole head, and being associated with constant vomiting, or attempts at it. Nothing had been retained since the 21st. The head was cool. Pupils sensitive to light, the candle-light causing her pain. Intellect perfectly clear. Tongue clean. Temperature normal. Pulse rather hard, 52 per minute; its force irregular, and rhythm not quite steady. Abdomen retracted — no hernia to be discovered; no pain anywhere except in the head. Catamenia regular. No paralysis. Not having an ophthalmoscope with me at that visit, the optic discs were not then examined.

From the history and the general appearance of the patient, however, there seemed enough to warrant an intimation to the mother of the gravity of the case, and she was therefore advised to that effect.

The treatment adopted at first was:—

Ice to be applied to the head constantly, and the room to be kept quite dark and free from all disturbance. She was ordered to be fed on iced milk and soda-water, given a teaspoonful at a time, and she took liq. bismuthi et ammonie citratis ʒss, with 10 grains of bromide of potassium in water every four hours.

The next day (Dec. 24) she still rejected everything that was taken, and her sight was now noticeably occasionally double, probably from some paresis of the external recti. The optic disc on both sides was very hazy, grey and swollen, the vessels being irregular in their calibre. (Double optic neuritis, the right eye being the more advanced of the two). Pulse still only 52 per minute, and irregular. Lime-water was substituted for the soda-water, and ice was applied to the epigastrium. These local measures appeared to have some effect upon the vomiting, which ceased the same afternoon, and on Dec. 25 she felt and looked much better. The tongue was still clean. Temperature normal. The pulse only 48; rhythm as it was. The bowels had acted freely; but as there still appeared to be some fulness of the abdomen, a soap injection was ordered.

The sight was now very dim on the right side, and to enable her to see well she found it necessary to close this eye, and use the other singly.

Dec. 26.—While the enema was being administered yesterday she again had a most violent attack of headache, and this has been agonizing during the night. She has had to rise in bed and clutch hold of anything within reach, and frequently cries out with the pain. Her mother states that she has seldom seen such pain as this patient appears to suffer. *At its severest she has suffocative attacks, in which she can hardly breathe.* It was impossible to be certain as to the seat of this dyspnœa from the patient's description. Whether it was a mere subjective sensation confined to the lungs or laryngeal spasm, I do not know. If anything is given in any quantity by the mouth, she instantly begins to retch. She is worn and wasting about the face. The sight of right eye is still very dim, but the pupil acts well. Pulse still 48.

Catamenia appeared yesterday slightly, ten days before the time. Urine turbid, with lithates. No excess of phosphates. No albumen.

Ice was still assiduously applied to the head, and she was now ordered iodide of potassium, gr. v, with the bromide she had previously been ordered, and a powder of 3 grains of hydrargyrum c. creta, and 5 grains of Dover's powder night and morning.

27.—She had passed a better night, having been very drowsy. There was still dimness of sight in the right eye and painfulness of the eye-ball. She has only been delirious once, but she talks much in a disturbed sleep.

She was at the time of the visit perfectly clear-minded. She complained of pain all down her neck, which was strictly limited to the right half of head and face and right side of neck. Pulse 48. No tâche cerebrale.

29.—She had what she describes as a terrible night, but is not much the worse this morning.

31.—The sight becomes more dim, amounting now to inability to distinguish forms, and to see only a glimmer of light. The pupils act irregularly, and after a time appear to tire and remain dilated. The external recti are now decidedly paralysed. She has slight inward squint and inability to abduct the eye beyond the median line of horizontal rotation.

Jan. 1, 1875.—Mr. Higgens saw the patient to-day, and found:—Extreme venous engorgement of the right retina, the disc and retina immediately surrounding it being swollen grey and infiltrated. The arteries were very small, and

hidden in parts of their course. The left disc was in a similar state, but less advanced in its changes; it was swollen, and its edge blurred, the veins large, the arteries small. Vision is *good* on this side, but she has only perception of shadows on the right. She has had *a transient hemiplegia during the night,* being unable to move the left arm and leg for about two hours, the surface being numb. This followed upon intense headache.

2.—Much worse. During the night her speech has become affected, and her mother could not understand her. She is not quite sensible now, and only half comprehends what is said to her, while she is constantly crying out as to the pain in her head. The bowels are obstinately confined.

3.—She had two drops of croton-oil given to her and a soap enema, and became very much better after a free action of the bowels. She takes food well, but is inclined to vomit at once if anything more than the smallest quantity is taken at a time.

6.—The left optic disc is now quite obscured, and but little can be seen but a cloudy central point, with large veins emerging from it.

She has taken 3 grains of hydrargyrum c. creta thrice a day for two days. It was discontinued at the end of that time, as the glands in the submaxillary region were swollen and her gums sore. She still continues the iodide and bromide of potassium.

14.—Has been much better since the last report. The pain in the head recurs at times, but is not excessive. She has had small doses of opium and nux vomica since the 8th, in addition to the iodide. The bowels have acted naturally daily, and she wants to sit up. The eyes are apparently in much the same state. The pupils are dilated, and hardly acting. She can see nothing with the right eye, and has perception of light only with the left.

18.—Vomiting has returned again on two occasions after bad headache, lasting for some hours each time, but her general condition is much better, and she could distinctly see the fire yesterday with the right eye. The pulse is still irregular. She was put on her feet and made to walk; no staggering could be detected; she merely needed a guide to conduct her.

From this time she slowly improved, and on March 11 it is noted that she can now see to walk about the room, and even to read ordinary type for a few seconds, and she manages

to knit without dropping many stitches. The pupils now act, though sluggishly, and there is less paralysis of the left external rectus, though it still does not evert the eye-ball. No headache or vomiting since last report. She has left off the iodide of potassium and taken cod-liver oil and quinine.

The eyes were examined again on April 15. The right disc is irregular and whitish, but has some good-sized vessels running from it. The left is less white, and the retinal blood supply is generally better; in fact it is not so very much below normal. It is irregular in shape, and one artery looks plugged. The external recti now act normally, or nearly so.

She looks rather thin and haggard, and has a little cough, but no disease can be detected in either lung.

May 26.—Both eyes have opaque and white optic discs. There is some opacity of the retina in a direction downwards and inwards from the disc in the right eye (possibly congenitally opaque nerve-fibres). Blood supply to the retina fairly good in both. H $\frac{1}{20}$ in both eyes.

Right eye, V $= \frac{20}{70}$. Field of vision much contracted above and to the nasal side; fairly good to outer side and below.

Left eye can barely count the fingers held before the window.

January, 1876.—The patient is still well in general health, and is now getting much stouter. Her only troubles now are the state of her sight, and her inability to take any solid food. All meat, or indeed anything solid, has to be minced most finely and taken in small quantity, else she vomits.

The following is the state of the eye:—

Right eye reads Snellen 70 at 20 feet ($v = \frac{20}{70}$): reads Snellen $2\frac{1}{2}$ with difficulty at about a foot distant. The field of visual perception (quantitative field) is of nearly normal extent, but the surface over which objects can be plainly distinguished (qualitative field) is marked by very narrow limits. The eye soon tires when looking either at near or distant objects. This, however, may be partly accounted for by hypermetropia which exists in both eyes.

When reading she has to keep moving the eye so as to fix each word separately, excepting when the print is as large as $8\frac{1}{2}$ Snellen.

In the left eye is a central blind patch, over which there is bare perception of light. She distinguishes large objects in peripheral parts of field, and counts fingers in some directions.

Pupils are moderately dilated, equal; both act to light independently, and when both eyes are open, but the movements of the iris are sluggish. All movements of the globes are normal. The right eye has a good range of accommodation ($=\frac{1}{9}$ without neutralisation of hypermetropia).

The ophthalmoscope shows the right optic disc to be greyish white, a white figure skirting its lower margin (very probably caused by congenitally opaque nerve-fibres), a fair-sized artery and vein running upwards, and a similar number downwards, but many of the smaller trunks have disappeared.

In the left eye the disc is greyish white, the retinal blood supply is, however, greater than in the right; there is an ill-defined haze in the region of the yellow spot, visible only in the erect image.

The outline of both discs is irregular.

Summary of Symptoms, in the order of their occurrence.—Paroxysmal headache and vomiting accompanied or followed very early by progressive optic neuritis affecting both eyes; suffocative attacks during the headache; pain and some slight hyperæsthesia on the right side of the head and neck; incomplete paralysis of the external recti; very transient left hemiplegia following a severe attack of headache; indistinctness of articulation and slight mental disturbance; almost complete amaurosis; a slow and irregular pulse and constipation during the whole course of the acute attack; gradual subsidence of the optic neuritis, leaving atrophy of the discs behind with considerable impairment of sight; occasional tendency to vomit persistent still, a year after the onset of illness.

The sudden onset of the symptoms, the paroxysmal headache, vomiting, and early optic neuritis, unaccompanied by any febrile disturbance, seemed to us to favour the diagnosis of cerebral tumour rather than meningitis (tumour is here used to mean a lump only, not a new growth necessarily). Pronounced meningitis, unless it be very chronic, is so frequently unassociated with anything more than very slight morbid appearances in the disc, that the very early neuritis suggested the occurrence of some change in the substance of the brain, which might extend along the fibres of the optic tracts. The absence of fever was also against any acute meningitis.

Taking her family tendency into consideration with these points, and also taking cognizance of the blow the patient had received some months previously, and the occasional

headaches she had suffered since, we concluded that she was the subject of a yellow tubercular mass at the posterior part of the brain, with recent changes going on around it. But when the attempt was made to localise this more precisely, the difficulty in doing so was considerable. The symptoms indicated disturbance of function of the sixth nerve on both sides, persistent for a considerable time, and a merely temporary disturbance of the pneumogastric, hypoglossal, and branches of the cervical plexus. The latter only on the right side. These associated with a very transient hemiplegia on the left side. It was clear from these points that the disease was chiefly, at any rate, on the right side of the brain; but whether outside, and exerting pressure upon the pons varolii, or the nerves at their emergence, or whether involving the substance of the pons or the cerebellum close to it, we did not see any way to determine. The pain which was experienced in the right side of the neck and posterior part of the head we suggest was determined by the communication of the spinal accessory with branches of the cervical plexus, and the symptoms therefore corroborate that of the suffocative attacks (which we did not witness) in pointing towards some disease about the right eighth pair.

The occurrence of inability to move the left arm or leg for two hours or so after a severe attack of headache is worthy of attention. It may, one may suppose, have been due to some slight increase of the local changes of which the headache itself was alike indicative; or, as seems more probable, it was a paralysis due to nerve exhaustion, or to anæmia from a contracted state of the blood-vessels, consequent on the pain.

One other point is raised by the case, and it is this:—Does the fact that the patient has recovered negative the diagnosis of some yellow deposit in the brain? We think not; and if not, does the still present tendency to retch on slight provocation indicate the persistence of the original disease, and render the prognosis ultimately unfavourable, or is the vomiting merely the persistence of a habit which was then first brought into being.

The case is interesting, too, as an instance of recovery, so far, of a certain amount of vision after severe optic neuritis, attended during its progress with almost complete blindness. Such an occurrence is rare, though we have known it to occur occasionally. As is well known, by far the greater number of cases of optic neuritis so complete as this are followed by almost total extinction of vision. By optic neuritis we do

not refer to the ischæmic state, which, though often attended by some effusion, may exist in a stationary condition for months, and then disappear, leaving vision unaffected. Optic neuritis, such as occurred in our case, commences as such, and is preceded by no—or at any rate an extremely brief—congestive stage; and recovery of any vision is rare, though it may occur. More or less marked atrophic changes are invariably left behind.

Another point of interest in this case is that very good vision exists with an apparently very bad condition of the optic nerves.

The left disc appears least affected, although vision of the left eye is most impaired. This, however, may be accounted for by the atrophic change having involved those nerve-fibres which should carry impressions from the yellow spot.

The excentrically situated portions of retina are more sensitive in this eye than in the right, so that altogether there may be a larger number of healthy nerve-fibres collected in the left disc than in the right.

The treatment of the case can hardly raise much discussion. That there were progressive inflammatory changes at work was evident, and under such circumstances iodide of potassium and mercurials were the remedies indicated, with the local application of cold to the head. Subsequently, in addition to tonics, small doses of opium were given for a long period, in the hope that the circulation in the retina might be improved thereby—a result which has apparently occurred occasionally from our usage of the drug in other similar cases.

XXXV.—*Large Hydatid Tumour of the Orbit, with Protrusion and Eversion of the Eye. Choked Optic Disc from Pressure. Removal of Tumour without Loss of the Eye. Recovery.* By G. Lawson. *Read March* 4, 1876.

ELIJAH F., a strong healthy-looking man, æt. 29, married, a fisherman residing at Tollesbury, near Kelvedon, Essex, came under my care at the Royal London Ophthalmic Hospital, Moorfields, in October 1872; suffering from protrusion and eversion of the left eye, with considerable diminution of sight.

History.—He states that there was nothing wrong with the eye until ten weeks previously, when for a few days 'it felt hot and as if sand were in it.' This feeling of discomfort went off, and the eye for about a fortnight was quite well, when the same symptoms returned with the addition of considerable pain in the forehead and temple of the same side. The pain was of an aching character, worse at night, and sufficient to disturb his sleep. These symptoms continued for about three or four weeks, and then the pain gradually ceased, and for the last three weeks he has had none. With the diminution of pain his wife noticed that his eye began to protrude, and as the protrusion has increased his sight has steadily failed. He has not had any rigors.

State on Admission.—There is proptosis of the left eye to the extent of almost half an inch beyond the orbit, and with

Woodcut 7.

complete divergence, as shown in the woodcut taken from a photograph (see woodcut 7). The movements of the eye are very limited, as it is evidently forced into its present position and held there by a tumour behind the globe. A soft mass can be felt at the upper and inner part of the orbit, which gives to the fingers a sense of fluctuation.

Vision.—He can count fingers at about one foot, and his field of vision is complete. The pupil is slightly dilated, and the cornea clear.

The pupil having been dilated with atropine, an examination was made with the ophthalmoscope. The optic disc

presented the appearance well represented in the coloured drawing by Burgess, and known as 'the choked disc.'

By direct examination, the swollen optic nerve seemed to stand out from the fundus; the veins and arteries were all extremely tortuous at the disc, and far on to the retina. The veins especially were much dilated, and bent abruptly as they passed over the margin of the nerve, and the arteries were apparently enlarged.

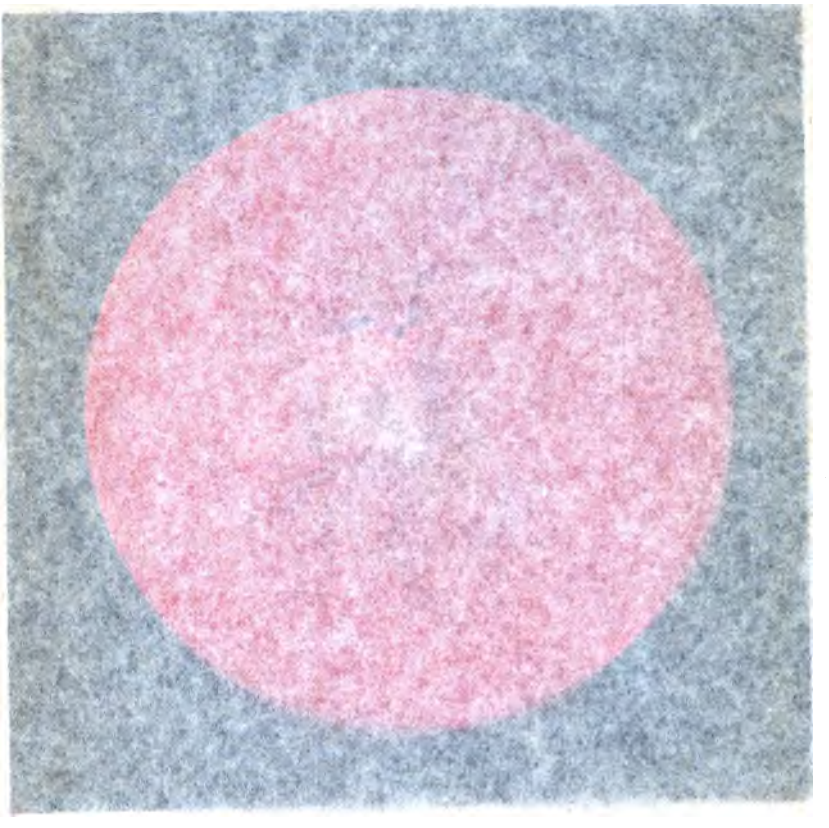
Oct. 11.—I to-day punctured the tumour with a Beer's knife through the upper lid, and about two drachms of clear transparent fluid, like water, escaped. Unfortunately I had no watch-glass at hand by which I might have caught the fluid, and no examination of it could be made. I concluded, however, from the contents of the cyst, that it was an hydatid. With the escape of the fluid the eye immediately receded considerably.

15.—There is much less protrusion of the globe, and the sight is decidedly improved. He is now able to read No. 16 of Jaeger's test types. Examined with the ophthalmoscope, a very remarkable change was noticed. The great engorgement of the disc had almost disappeared. It no longer stood out prominently from the fundus. The veins were considerably reduced in size, and the arteries appeared of their normal size when compared with the other eye. The wound which I had made through the lid was quiet, and there was no evidence of inflammation or suppuration of the cyst.

The patient now returned home, and I hoped that although the cyst, supposing it to be an hydatid, had not suppurated, yet that the puncture which I had made into it would destroy its vitality, and that it would completely collapse and give no further trouble. I saw the patient a few times during the next two months. The eye remained stationary. It still protruded, but in a less degree than when he came to the hospital, and the sight had not improved.

I now lost the man, and heard nothing more of him until last summer, when he was in the Ophthalmic Hospital at Dublin. He only remained there a short time, and left without any operation being performed.

On Feb. 14 of this year the patient was again admitted into the Royal London Ophthalmic Hospital, as the tumour had considerably increased in size, and he was anxious to have something done to relieve him of it. The protrusion and eversion of the eye was greater than is shown in the photograph, which was taken in October 1872. A firm



E Burgess del et ch lith. W West & Co imp.

CHOKED OPTIC DISC.

Mr Lawson's case of hydatid of the orbit.

tumour, with an indistinct sense of fluctuation, was readily felt with the fingers at the upper and inner portion of the orbit. His sight was so impaired that he could only see shadows, or tell the windows in the room, but he was unable to count fingers. The patient having been put under the influence of ether, I cut down upon the tumour so as freely to expose it, and then punctured it, when a quantity of clear water escaped, and with it two or three small daughter cysts. I then seized hold of the thick parent cyst with a pair of toothed forceps, and fortunately succeeded in drawing it out entire. When removed it was rather larger than a pigeon's egg. A piece of lint was placed in the wound, and a wet compress and bandage tied over the eye.

Feb. 29.—The wound is suppurating freely, and there is swelling of the upper lid. The eye has receded into the orbit, but the swelling of the deeper tissues still causes it to protrude. The sight is much improved. He can now read No. 20 of Jaeger's test types, and counts fingers easily.

On March 3 the patient left the hospital.

I have since heard that the patient is quite well. July 1876.

Report of Dr. Cobbold's Examination of the Tumour.

On the 4th of March Mr. Lawson invited me to inspect an example of cystic growth which he had removed from the orbit. It was contained in a bottle, and along with it were several smaller cystic formations that had escaped from the interior of the larger growth. Before removing any portion of the large cyst I at once recognised it as a true hydatid, the naked-eye characters being sufficiently characteristic. However, from the clinical and pathological interest attaching to the case, I requested Mr. Lawson to snip off a small portion of the internal lining membrane for the purposes of microscopic examination. This was done; the fragment detached measuring rather less than the fourth of an inch in length by one-seventh of an inch in breadth. Under Ross's half-inch objective I perceived that we had not only secured a portion of the granular endocyst, but also a corresponding fragment of what may be called the innermost layer of the ectocyst. At one spot the cut border was slightly curved, and when this edge was placed under the $\frac{1}{4}$-inch objective. I obtained a satisfactory general view of all that was to be

seen by high powers. Giving approximate measurements, the clean cut edge of the hyaline endocystic layer presented an entire thickness of $\frac{1}{280}''$ in diameter; and it was itself made up of no less than fourteen perfectly distinct and transparent laminæ, each lamina giving an average diameter of $\frac{1}{2750}''$ only. At one point the inner surface of the retocyst (where it should be applied to the outer surface of the endocyst) was exposed. This part presented numerous striæ, corresponding in their regularity and direction with those presented by the cut border; but the surface appeared rather less transparent, and the spaces between the striæ only gave a diameter of about $\frac{1}{5000}''$ of an inch. The granular endocyst, overlapping these structures in the field of the microscope, presented nothing remarkable; or rather it had lost much of its normal appearance. It had a yellowish opaque aspect, being made up as it were of more or less rounded and flat patches, about the fortieth of an inch in diameter. These again consisted of very imperfectly defined smaller masses about $\frac{1}{300}''$ in breadth, more or less. There was nothing uniform either as regards the size of the patches or in respect of the granular elements of which they were composed. Several of the large granules resembling fat globules were measurable, and these gave an average diameter of $\frac{1}{2500}''$. There were also several needle-shaped crystals, probably of post-mortem origin ($\frac{1}{1000}''$ to $\frac{1}{600}''$). It remains for me only to add that although there was no trace either of the so-called echinococcus heads or hooklets, not a doubt can be reasonably entertained as to the true hydatid character of the cystic growth in question.

Remarks.—The points of interest in this case are—1st, the extreme rarity of hydatid cysts in the orbit. I am informed by Dr. Cobbold that there is only one other case recorded in England, and that occurred in a patient of Mr. Hulke's. The preparation is now in the museum of the Middlesex Hospital. 2nd. The production of the choked disc by the pressure of the tumour on the optic nerve, and the return of the optic disc to its normal appearance on the removal of that pressure by the tapping of the cyst. It has been long known that tumours pressing on the optic nerve will produce choking of the disc, but I do not remember any case in which the fact has been so capable of demonstration as in the one which I have related. In this patient the return of blood from the eye was impeded by the

pressure of the tumour on the optic nerve, and immediately on its removal the optic disc assumed its natural aspect. 3rd. The tumour was removed without inflicting any injury on the eye.

XXXVI.—*On Subconjunctival Sclerotomy as a Remedy for Glaucoma.* By SPENCER WATSON. *Read April* 28, 1876.

THE operation of sclerotomy, as performed in the following cases, is a modification of that proposed by M. Quaglino of Pavia, and described by him in the year 1873 under the name of Interstitial Sclerotomy. M. Quaglino made an incision of the sclerotic by means of a triangular keratome, as in the first step of iridectomy. By this incision the conjunctiva is divided as widely as the sclerotic, and the iris must almost of necessity prolapse into the wound.

In the operation I perform (and which I believe is the same as that performed by Mr. Bader and M. Wecker of Paris, and also by my colleagues Mr. Dunnage and Mr. Nettleship), I use a Gräfe's cataract-knife with a very narrow blade. This is made to penetrate the sclerotic about 1‴ from the apparent corneal margin on its temporal side, at a level with a line crossing at right angles the vertical diameter of the cornea opposite its upper $\frac{1}{6}$th. The knife is carried horizontally across the anterior chamber, skirting its upper angle, and made to penetrate at a point exactly corresponding to the point of entrance, but on the nasal side of the cornea. The edge of the blade then cuts its way out upwards obliquely through the sclerotic, until it is visible through the superjacent conjunctiva. This is left *un*divided, and the knife withdrawn slowly from the wound.

This operation therefore differs from Hancock's operation, and also from Mr. Vose Solomon's Intraocular Myotomy, in several important particulars. After completing the section the iris sometimes prolapses into the wound, but generally it only becomes somewhat drawn up, and leaves a slightly distorted pupil. There is a free escape of aqueous and a good deal of bleeding; the anterior chamber does not become full of blood, as after iridectomy, but the blood makes its escape upwards and through the conjunctival punctures.

An important advantage of sclerotomy is the shorter time

required for its performance as compared with iridectomy, and the smaller number of instruments required. So that it is more often possible to persuade patients to submit to it without the use of an anæsthetic, and if an anæsthetic is used a less profound degree of anæsthesia will suffice for its completion. Remembering that cases of glaucoma sometimes come under the hands of the surgeon somewhat suddenly, and without giving time for preparing the patient for the administration of an anæsthetic, delay being often equivalent to the loss of the few hours in which the operation will be of any avail, it is of immense importance to have at our disposal a means of operating which is rapid in execution and not necessarily requiring the use of anæsthetics.

Case I.

James Farrer, æt. 70, at present a pensioner, till two years ago a labourer in the docks. His general appearance is haggard and careworn, and his manners depressed. His features are sharp, but his general nutrition fairly good.

History.—Has had rheumatic pains but no severe illness. His sight began to fail two or three years ago, but during the last seven months has become much worse in his right eye, and has been associated with chromopsiæ and pain in orbit. A week ago very severe pain came on in the eye-ball and orbit, accompanied by vomiting and rapid deterioration of sight.

Present Condition (Jan. 28, 1876).—The right pupil is widely dilated and immovable, the colour of the iris being of a dull grey tint, and the anterior chamber turbid. There is greatly increased tension (T_2 or T_3), severe pain in the right brow, temple, and side of the nose and cheek. The ophthalmoscope gives only a dull red reflex from the fundus, the details of which cannot be made out. With the right eye the vision amounts to quantitative perception of light only; with the left No. 10 Jäger's test-types can be read.

Jan. 28.—Ether was given and subconjunctival sclerotomy performed in the way described, the incision being carried upwards and a little inwards. Immediately after the operation the pupil was noticed to be a little displaced upwards, but there was no prolapse of iris into the wound.

Feb. 1.—The tension is less; he complains of no pain, and has had none since the operation; he can now count

fingers with the eye operated on. The line of the sclerotic incision is marked by a translucent dark cicatrix.

4.—Vision improving. No pain.

11.—Vision. Reads No. 16 (Jäger). Tension very little above normal. The details of the fundus can now be seen with the ophthalmoscope. The optic disc can be seen of a dirty-grey tint but not excavated, all the vessels on it lying on the same plane. The optic nerve is surrounded by an irregular-shaped atrophic patch of choroid.

March 10.—Vision remains good, and there is no pain. The tension is still slightly above normal.

Case II.

Double Glaucoma. Iridectomy in the Left and Sclerotomy in the Right Eye.

Ann Langley, æt. 68, widow, a monthly nurse, who had been sitting up for many nights consecutively before the attack of glaucoma, was suddenly seized on Dec. 24, 1875, with severe pain in the right eye, accompanied by coloured haloes and bilious vomiting. She does not appear to have had any premonitory symptoms before this date, but has long been very presbyopic. The sight of her right eye was at once very much impaired, but she did not apply for relief till Jan. 22, 1876, the left eye having been also attacked on the previous day.

On admission the symptoms of glaucoma in both eyes were marked and severe. The right eye was extremely hard, and she could only distinguish fingers held at a distance of 4″; with the left, almost as hard, she read words of No. XII. of Snellen's test-types. The details of the fundus of neither eye could be made out with the ophthalmoscope, and only a dull reflex was obtainable from the pupil of the left. In the right eye the pupil appeared to be absolutely dark when light was thrown into it by the mirror.

Jan. 22.—Mr. Dunnage gave the mixed anæsthetics—alcohol, ether, and chloroform—and I performed sclerotomy on the right and iridectomy on the left eye. A marked improvement of vision and relief of all the glaucomatous symptoms was noticed on the next day, and this continued steadily till three weeks after the operations (Feb. 12), when she could read type of J. 11 with the right eye and J. 10 with the left, and the tension of both was normal. With spectacles

of +9 she could read J. 4, or type the size of the leading articles of the 'Times.'

About a month after the operation she again began to see coloured haloes with her right eye and the tension had returned, and a few days later I repeated sclerotomy (March 4).

Seven days later (March 11) the tension of her right eye was normal and vision had improved, but up to the present date it has never recovered the sight it had gained after the first operation. The left eye remained perfectly good for all ordinary purposes, and she has again gone out nursing. It must be noted here that sclerotomy was used on an eye that had been suffering a whole month and was in imminent danger, while the left eye on which iridectomy was performed had been attacked only twenty-four hours before, and was much less severely affected. The more perfect result obtained after iridectomy is therefore in this case only due to the more favourable conditions under which it was employed.

Since these two cases I have operated in three others with somewhat less favourable results in two, but with results which promise to be very good in a third, viz. in that of Elizabeth Brooks, a widow of 46 years of age, who is now in the ante-room, and who was operated on on the 5th instant. Her sight, before the operation, was almost gone. She is now steadily improving, and the tension of the eye is normal. In this case the iris has completely prolapsed into the wound, forming a small staphyloma.

The influence of iridectomy and sclerotomy in reducing tension is thus explained:—

1. The immediate cause of diminished tension seems to be due to escape of aqueous humour. A number of experiments performed by M. Secondi, who simply tapped the anterior chamber, conclusively proves this point. The effect of tapping the anterior chamber, however, is only transitory; the aqueous rapidly reforms and tension returns within a few hours—as soon, in fact, as the corneal wound has healed.

2. A relief of the intra-ocular circulation is caused by the flow of blood from the vessels of the iris in iridectomy, and from the venous canal of Schlemm and the vessels of the ciliary muscle in sclerotomy. This, too, is only transitory in its effects.

3. A cystoid or cicatrix, with their transudatory walls, favours the flow of intra-ocular fluids by exosmose. Such a cicatrix is commonly observed after iridectomy, occasionally also after sclerotomy.

4. The intra-ocular blood-vessels probably form anastomosis with those of the conjunctiva, and the extra-ocular capillaries of the sclerotic during cicatrization after sclerotomy and iridectomy, and thus enable the intra-ocular circulation to maintain its balance with that outside the eye-ball. This factor in the chain of causes has been much overlooked, and is probably the most persistent of all in the production of the permanent results obtained by these operations. The reasons I would adduce for this view are the following:—We observe first that in glaucomatous eyes the superficial vessels of the sclerotic have often a tortuous appearance, similar to those of the veins of the abdomen in ascites, and this has given rise to the expression 'abdominal vessels,' as indicating an analogous cause. In the case of the abdomen the portal system is obstructed, and the increased size of the superficial veins is an indication of the extent of the deep-seated obstruction. The tortuous vessels of the surface of the sclerotic indicate in like manner an obstruction to the return flow of blood from the interior of the eye-ball through the veins of the choroid, which (in consequence of the tense state of the sclerotic) meet with an obstruction to the free passage of blood through them. When the wound is made through the coats of the eye in front, the ciliary veins find a more ready outlet in the cicatrix tissue, and a free anastomosis at this point seems to maintain an equilibrium in the tension of the intra-ocular circulation. The fact that in some cases tension returns after iridectomy or sclerotomy is in general to be attributed to the small size of the sclerotic incision and the relatively small number of the vessels that inosculate with those of the surface and of the conjunctiva. Hence the importance of a large incision in these operations; and hence, perhaps, the advantage of the mode of incision practised in subconjunctival sclerotomy as compared with the more limited incision in iridectomy as ordinarily practised. On the other hand iridectomy, by the very nature of the operation, leaves a larger number of vessels of considerable size and calibre open and ready to form an anastomosis with the more superficial vessels of the sclerotic and conjunctiva, and thus the limited extent ot the incision is compensated for by the greater vascular aperture left by the wound. There are still, therefore, arguments for the retention of iridectomy as being, in most cases, the best and most reliable operation of the two, though in the cases of atrophied iris sclerotomy will be preferable. I wish, however, to place sclerotomy as an alter-

native operation much to be relied on in almost all cases, but as especially applicable to the particular class of those with widely dilated pupils, in which the iris has become altered in texture and wasted from long-continued disease. As a further argument in favour of sclerotomy, the fact that the large venous canal of Schlemm is almost invariably laid open in the incision must have an important bearing; for the larger the vascular aperture left, the greater the chance of a permanent free inosculation between intra-ocular and superficial vessels, and the better the prospect of a permanent reduction of the intra-ocular tension and its consequences.

An incidental advantage of sclerotomy should not be overlooked. It sometimes happens in the operation of iridectomy that the sudden relief of tension caused by the escape of the aqueous humour gives rise to hæmorrhage from the choroidal vessels and loss of the eye by disorganisation of the retina. This is less likely to happen from sclerotomy; for the incision, if properly made, allows the aqueous to escape only slowly, and gives relief to the vascular system of the choroid before the escape of the aqueous has been fully effected. It is possible, by very slowly withdrawing the knife after completeing the section, to allow a very free escape of blood from the divided sclerotic to precede by some seconds the escape of the aqueous, and thus the danger indicated may be almost entirely avoided.

In conclusion, the arguments in favour of sclerotomy are as follows:—

Sclerotomy is preferable to iridectomy—

1. Whenever the iris is atrophied and presents an extremely narrow rim around the pupil, and is drawn backwards towards the vitreous.

2. In many cases of *acute* glaucoma, when time is not available for the preparation of the patient for an anæsthetic.

3. Whenever, from any other causes, anæsthetics are undesirable.

4. In all cases in which profound anæsthesia cannot be safely induced.

Theoretical considerations would lead us to prefer sclerotomy in many other cases of glaucoma, but at present the results of iridectomy are so good, that until we have an equal percentage of successful cases of sclerotomy we can hardly estimate the relative value of the two operations. My own impression is that iridectomy will become everyday less com-

monly employed, and that the operation I have described is the future remedy for the great majority of cases of glaucoma.

XXXVII.—*A Railway Case. Shock from an unexpected Descent upon the Soles of the Feet, followed by Paresis of Extremities, Tremor of Tongue and Jaw, and Persistent Glycosuria.* By Thomas Buzzard, M.D. *Read April* 28, 1876.

On the night of January 7, 1875, a watchmaker, æt. 41, stepped out of a train which had been prematurely stopped just short of a station, and alighted, not, as he thought to do, on the platform, but on the permanent way. The depth of this unexpected step was about three feet, and the man came down heavily upon the soles of his feet, being prevented from falling backwards by the carriage which was behind him. He felt at once a 'rick' in his neck and a numb sensation across the lower cervical vertebræ, but he did not find any difficulty in walking to his residence, a distance of three-quarters of a mile. During the walk he kept his hand a good deal to the back of his neck, and rubbed this part occasionally. He slept that night, but with some starting and restlessness.

Next day, although not feeling quite so well as usual, he got up and attended to business; and so he went on for nearly a week, during which time his nights were bad, his appetite failed, and there remained 'a kind of dead numbness in the back of the neck.' Firm pressure upon the part would cause the sensation to pass off, and he did not think it of any serious consequence.

About six or seven days after the accident the patient began to be conscious of a loss of power in both legs, but especially the left, and in the left arm. He several times dropped things which he was holding in the left hand, and in this way contrived to break the verge of one watch and the cylinder of another. He had a numb feeling, too, in the left leg from the knee to the sole of the foot, and to a less extent in the right.

These symptoms became gradually worse, but he did not associate them with the accident, and delayed seeking advice until Feb. 1, when Mr. Shurlock, of Chertsey, saw him, and ordered him to bed. On Feb. 3, according to his own

account, he quite lost the use of his left arm, and a day or two afterwards his left leg was so weak that he could not stand. There was at the same time some loss of sensibility in the left hand. But these symptoms were of short duration, and on Feb. 27 he sat up for a time. He was then recovering strength in the arm, and he could stand, but his nights were still restless. By the 15th the hand had regained ordinary grasping power, but not its proper capacity for delicate movements. He now thought himself sufficiently well to do without medical assistance, and tried to work, but again and again met with accidents with his watches, so clumsy was he with his left hand. And besides this more localised difficulty he suffered from 'inward nervousness,' a weak feeling and tremulousness in his legs, together with startings of his limbs, which would wake him up many times of a night. His condition remained so unsatisfactory that his wife, on March 10, again sent for Mr. Shurlock, who then resumed his attendance.

Such is the account which was given to me by the patient, when I first saw him on April 1, 1875, in consultation with Mr. Shurlock and Dr. Charles Bennett. Mr. Shurlock, who had known the patient and attended his family for many years, informed me that the symptoms, when he was called in on Feb. 1, were suggestive of subacute rheumatism affecting principally the left arm and leg. He heard nothing of the accident for the first two or three days of his attendance, and he attributed to the effects of cold the semi-powerless state of the limbs and a certain stiffness of neck of which the patient complained. There was apparently no feverishness, and the pulse marked from 80 to 90. The urine contained a considerable amount of urates. The patient was not long in improving, and ceased to need attendance after a fortnight.

When Mr. Shurlock was called in again on March 10, the patient complained to him of sleeplessness, loss of appetite, and impaired sight; there was some tremor of his limbs, and he started at any sudden noise. His tongue was white, his pulse 90. On March 18 he was seen also by Dr. Charles Bennett, of Hammersmith, who informs me that the pulse was then 120, and that he formed a strong opinion that the symptoms which he observed were due to the accident. From this date until March 31, I am told by Mr. Shurlock, the pulse was persistently high. For example, on March 20, between 10 and 11 A.M., it numbered 130, and during this

period it was never found to be less than 100. On March 24 the patient described difficulty in lifting his feet to walk upstairs. On March 27 there was epistaxis, and from that time he began to get better altogether, sleeping tolerably well without sedatives.

Examining the patient, I found his temperature to be 98·6° Fahr., his pulse 112, and his general aspect not unhealthy. He appeared to be somewhat deficient in grasping power in the left hand, and he failed, when seated, to lift his knees with average force against the downward pressure of my hand. Apparently, too, there was some slight defect of common sensibility in the skin of the left hand, but nowhere else. There was no marked impairment of gait. When he opened his mouth to show his tongue there was much tremulousness about the jaw; and this, which was not observable when his face was at rest, became evident whenever he parted his lips to speak. His speech was of the hesitating character suggestive of partial paralysis of the tongue. This peculiarity of speech and tremor of the jaw I ascertained from Mr. Shurlock were not natural to the patient, nor were they apparent, I was informed, during his first illness in February. Mr. Shurlock noticed them for the first time when he was called in on March 10.

There was no diplopia, and the ophthalmoscope showed no pathological change in the fundus of either eye.

On electrical examination there was normal reaction to faradaism in both arms and hands.

Taking into consideration the character of the fall, a sudden and unexpected descent upon the soles of the feet, and the symptoms presented by the patient, which pointed to some lesion affecting the motor tracts to the extremities, the hypoglossal nerve, the motor portion of the fifth nerve, as well as the centre for cardiac movements, I thought that the medulla oblongata had sustained an injury by concussion, and suggested that if this were so the urine would probably be found to contain sugar.

The patient, at our request, passed some urine, which had at first a specific gravity of 1017, but when cooled down to 62° Fahr. marked 1023. In this specimen Fehling's test showed unequivocally the presence of sugar. Later I confirmed this result by fermentation, and, by Dr. Roberts' method, roughly estimated the quantity of sugar to be from two to three grains to the ounce.

An action for damages had meanwhile been commenced

against the railway company, and my opinion was asked as to the nature and extent of the plaintiff's injuries. The presence of sugar, combined with the symptoms described, pointing to a cerebro-spinal lesion, which might prove to be transitory in character, it was thought desirable to watch the patient for some months ere any opinion was given as to his future prospects. It was arranged that his weight should be taken, the urine occasionally tested for sugar, and the quantity which he passed measured from time to time.

The patient was about the middle height, and, as I understood, had never been corpulent. Three months before the accident he had weighed 11 st. 4 lbs.; on April 7, 1875, nearly three months after the accident, he weighed 10 st. 6 lbs.; on the 29th, 10 st. 4 lbs.; June 3, 9 st. 12 lbs.; July 3, 9 st. 8 lbs. The quantity of urine was never abnormally large; it varied from 30 to 55 ounces, but rarely exceeded 50 ounces.

On July 21 a partially restricted dietary was commenced, gluten bread being substituted for the ordinary loaf. On Aug. 3, whilst under this régime, the urine was found to have a specific gravity of 1030, and to contain no trace of sugar. The quantity passed in the twenty-four hours was 49 ozs. The patient had lost 4½ lbs. in weight since July 3. He then went to Margate for six weeks, and gained 6½ lbs. In October he discontinued the gluten bread and resumed ordinary diet, except that he took sparingly of potatoes and sugar. The urine *ipso facto* became again saccharine, and has continued so to the present time.

In November his cause came on for trial at Westminster. At that time his weight was 9 st. 9 lbs., that is 1⅔ stone less than it had been three months before the accident. There was still the peculiar tremulousness of the jaw and a hesitation in the utterance of words, but he could apparently walk very well. He said that his sleep was bad, that he could not use his hands dexterously, and that if he tried to read his head grew muddled. He looked ill. His urine contained sugar.

The opinion which I gave to his legal advisers was that, assuming the truth of his statement that he was quite well before the accident, I attributed his condition (which I described) to the fall, and believed him to be, in all probability, permanently disabled.

In the progress of the trial the plaintiff was examined by Dr. Ramskill and Mr. Sydney Jones on the part of the com-

pany, and the case was then stopped, a compromise having been effected between the counsel.

Dr. Ramskill is good enough to send me, in reply to an enquiry which I made of him, a note to the following effect:— 'I made a report to the legal advisers of the ——— Railway Company, substantially agreeing with you in every particular. The only question unsolved in my mind was this: Was there any sugar in the urine before the accident? Many persons habitually pass a small amount, and if the accident occurred to such a person the disease may have been only precipitated, not caused, by the accident. However, I decided that we had no evidence to show the probability even of such a state of urine before the accident. And I considered the prognosis if anything worse than you did, and advised a settlement on any terms consistent with the income of the plaintiff.'

Two months after the settlement of the action I procured some of the patient's urine, and Dr. Pavy was kind enough to examine it for me. He reported that it was of specific gravity 1019, and that it contained sugar in the proportion of 8·88 grains to the ounce. There was no albumen, and I may here say that there has been none at any time.

Mr. Shurlock informs me that he attended the patient in 1862 for sore throat; in 1867 for neuralgia of the face and neck, and for 'carbuncle;' in 1871 for neuralgia; in 1873 for lumbago; and that, in September 1874, he extracted some stumps for him, and, seeing that he looked in low spirits and complained of dyspepsia, he advised him to have a month's change of air, but did not otherwise prescribe for him.

The treatment of the patient, whilst under my observation, consisted in small doses of the iodide of mercury for a few weeks, followed by mineral acids.

A week ago I received some information about the patient's condition, which should be added to the foregoing account. I heard that he walks well, that there is little or no hesitation in his speech, and that the tremulousness of the jaw has quite disappeared. He complains, however, that he has no power in his arms, and that his fingers act spasmodically, preventing him from working at his business; but this difficulty, it seems, is not apparent to on-lookers. His urine is of normal quantity.* His weight on April 3 was 10 st. 3½ lbs. He still suffers from sleepless nights.

* August 1, 1876. His urine, which I tested to-day, is of sp. gr. 1032, and contains sugar. T. B.

Remarks.—Supposing that the glycosuria depended upon the injury in this case, the following hypothesis might explain its production:—A shock of the kind described would, I think, necessarily produce its greatest effect upon the under surface of the brain and medulla oblongata. If sufficiently violent, it would be liable to give rise to interstitial hæmorrhages. It is conceivable that these might be so minute as not to cause at the time any recognisable symptom, and that they might occasion, later on, patches of inflammation in connective tissue. The resulting effusion would cause at first considerable interference with the function of the portion of nerve-substance affected; but this would clear off, to a great extent, some permanent change of structure being, however, left behind.

Experiments by Pavy, Schiff, and others, have supplemented the great discovery of Claude Bernard, that puncture of a certain part of the medulla oblongata caused sugar to appear in the urine. It is now known that experimental injuries of a considerable portion of the cerebro-spinal axis—reaching, according to Dickinson, from the optic thalami to the lower end of the cervical enlargement—will render the urine saccharine. The faculty, however, is not equally distributed throughout this district, being displayed most strongly in the situation pointed out by Claude Bernard, a space bounded in front by a line connecting the origins of the auditory nerves, and behind by one connecting the nuclei of the pneumo-gastrics. It would seem that, consequent on the injury, an irritative influence is conveyed by the spinal cord and the last cervical ganglion, thence by the gangliated cord of the sympathetic to the splanchnic nerves, and by them to the liver. The exact mode in which the glycogenic function of the liver is so modified by the influence thus carried is still a matter of dispute, into which it would be foreign to my purpose to enter. Writers upon diabetes have collected numerous cases in which injury—more often than not, concussion—of some part of the cerebro-spinal axis has caused the urine to be saccharine, the condition being sometimes only transitory, whilst in other cases it is said that a diseased state, not distinguishable in its progress and results from typical diabetes, has been induced. I have myself seen cases in which a saccharine state of the urine existed in connection with disease which could be referred, by anatomical considerations, to the medulla oblongata. In such the quantity of sugar was small, and the normal amount of urine was

not exceeded. I think that I have also met with cases of confirmed diabetes in which there was a history of previous injury; but it has chanced that I have never watched a case through from its beginning in an injury to the head to its termination in death, presenting in its course the characteristic features of typical diabetes. One of my reasons for bringing the present case before the Society is that I hope to glean from the experience of members some information upon the interesting question, Does the symptom glycosuria, resulting from injured nerve-substance, run on, where it is not transitory, and develop into the disease known as diabetes?

It was necessary, in the case here related, to say whether the glycosuria depended upon the accident for its cause, and if so, what was the prognosis? My chief reasons for concluding that the condition was probably of traumatic origin were these:—1. The affections of motility of which the plaintiff complained pointed to the medulla oblongata as the probable seat of lesion, and induced me to search for sugar. 2. The patient's weight three months after the accident, although diminished from what it had been three months before the accident, was still a very fair weight for a man of his height and general conformation. Under observation he lost, during three months, nearly one stone in weight; and had this rate of decrease been going on for any length of time previously, he must have been at quite a recent date a much bigger man than all the evidence which I could collect showed that he had been. 3. The small quantity of sugar when it was first discovered was opposed to the idea that the condition had been long existent. As regards the prognosis, the fact of the persistence of the sugar (constant, when not interrupted by the nitrogenous dietary) during seven months showed the affection to be something differing on the one hand from the transitory glycosuria of a few days or weeks, not unfrequently found after injuries not only of the nervous system, but of other parts of the body, and on the other from the irregular and inconstant appearance of sugar sometimes seen in connection with dyspepsia, especially of gouty character. I pointed out that no life-office would assure the plaintiff, but I was unable to give a decided opinion as to the probable course which his malady would pursue. It seemed to me a question whether it would develop into typical diabetes, or into a slowly progressive disease of cerebro-spinal nervous system, of the nature, perhaps, of the multiple sclerosis, to which many of the symptoms seemed to point. In this doubt I still remain.

XXXVIII.—*Case of Phthisis and Patent Ductus Arteriosus attended by a Thrill and two Murmurs.* By Edward Headlam Greenhow, M.D. *Read April* 28, 1876.

Eliza H., æt. 17, was admitted into the Middlesex Hospital, under my care, on Oct. 26, 1875.

Previous History.—Several members of her family had died of phthisis. Her father was subject to winter cough. Patient herself had had a cough from childhood, which had become much worse about a year previous to her admission. From that time she had been losing flesh, had been very short of breath, especially on making any exertion, and had had several attacks of hæmoptysis. The catamenia had never been properly established, having only appeared on two occasions about a year ago.

State on Admission.—A small, ill-nourished, stunted girl, weight about five stone. Chest contracted and pigeon-shaped. Tips of fingers clubbed. Pulse 136; temp. 99.6°.

On percussion there was absolute dulness in the left subclavian and supra-spinous regions, and also considerable impairment of resonance over the lower lobe of the left lung. On auscultation tubular breathing and moist crackles were heard beneath the right clavicle and in the right supra-spinous fossa, and cavernous breathing, gurgling, and pectoriloquy in the apex of the left lung. There was moist crepitation in the bases of both lungs.

The heart's apex-beat was situated a little below and slightly outside the nipple; its area of impulse was much extended; marked pulsation being visible in the second, third and fourth left intercostal spaces, over which also a well-pronounced purring thrill was felt; its point of greatest intensity being the second intercostal space, near the border of the sternum. In the same space was audible a very harsh bellows murmur, which appeared to be synchronous with the systole, but ended very abruptly, and was followed by a continuous humming murmur, which lasted during the whole period of the heart's action not occupied by the bellows sound. This humming murmur varied somewhat both in tone and intensity from time to time, being sometimes musical and at other times rather harsh; it was not heard at the back of the chest. Urine sp. gr. 1020, acid, not albuminous.

Progress of Case.—The patient remained in the hospital until Jan. 21, 1876, when she returned home at her own desire. She had improved somewhat during her residence in the hospital. Her cough had decreased in frequency, expectoration had almost entirely ceased, and she had not lost weight. The pulse continued frequent, but the temperature had never been much above the normal. The physical signs of disease in the lungs had, however, undergone no material change, and the cardiac impulse, the bellows murmur, humming sound and thrill were, in all essential respects, the same at the time of her discharge as they were noted on her admission.

On Feb. 5 she was re-admitted. Her face was very livid; pulse 125, almost imperceptible; respiration 60; temp. 99.8.° Crepitation was heard all over the chest, masking the heart-sounds, but the purring thrill was still felt in the same situation as before. She died on Feb. 7.

Post-mortem Examination.—Pericardium almost entirely covered by lung.

The left lung was adherent to the parietal pleura throughout, and also to the pericardium; the adhesions were most intimate over the upper lobe, in which there were several cavities, one large and the others smaller, which freely communicated with each other. These cavities were evidently of old date, being lined by a thick membrane, and fenestrated with dense fibrous bands. There was also much lobular consolidation, for the most part in a state of caseation, but there were no miliary granulations. Immediately underneath the large cavity was a mass of enlarged and indurated glands, which closely surrounded the pulmonary artery and the arch of the aorta.

The right lung was slightly adherent above; its upper lobe was almost wholly consolidated, and presented, on section, a reddish-grey granular surface. The consolidated portion was well-defined and clearly distinguishable from the rest of the lobe. The middle lobe, like the upper one, was solidified by recent pneumonia; the lower lobe was only congested.

The right cavities of the heart were distended with blood.

The right ventricle was much enlarged, its fleshy columns were numerous and prominent; the wall was firm and of a dark-red colour, and measured one-eighth of an inch in thickness. The right auricle was dilated. As the heart lay *in situ*, no portion of the left ventricle was visible.

The foramen ovale was perfectly closed; the Eustachian valve presented the appearance usual in adult life; the tricuspid and pulmonary valves were normal.

The orifice of the pulmonary artery measured two inches and seven-eighths in circumference. On laying open the vessel, a small orifice, of the size of a crow-quill, was observed just at the point of bifurcation; its margin presented a valve-like fold of the lining membrane which almost surrounded the orifice. A probe introduced into this orifice passed through into the aorta. This narrow ductus arteriosus was about a quarter of an inch in length, and opened into the arch of the aorta opposite to, and just beyond, the left sub-clavian artery; its aortic orifice was about twice the size of that in the pulmonary artery, and was guarded in the same way by a reduplication of the lining membrane. This fold was situated on the lower wall of the aorta, which it half surrounded, and was of a somewhat semi-lunar form; it gave to the duct the appearance of an infundibular mouth.

The muscular substance of the left ventricle was firm, its wall measured half an inch in thickness. The mitral and aortic valves were normal; the chordæ tendineæ and papillary muscles were thickened. The septum ventriculorum was complete, but very thin, and quite transparent at the 'undefended part.' The aorta measured two inches and a quarter in circumference at the orifice, and was somewhat constricted just below the sub-clavian artery.

Remarks.—It was very difficult, during the patient's lifetime, to form any conclusive opinion as to the cause of the thrill and the two murmurs observed in this case. Their limitation of seat pointed very distinctly to their origin in the pulmonary artery, and I sometimes thought that the bellows murmur and thrill might be due to obstruction to the flow of blood through the pulmonary orifice.

The humming murmur, however, it was obvious could not arise from that cause; and, from its duration and character, I was satisfied that it could not be due to incompetence of the pulmonary valves. Indeed, after watching the case for some time, I came to the conclusion that even the bellows murmur and thrill were not produced by any narrowing of the pulmonary orifice, but more probably by some pressure upon, or displacement of, the pulmonary artery, resulting from the chronic lung-disease.

The results of the post-mortem examination seem to show that the conjecture I formed during the patient's life-

time was correct. It now appears evident that there did not exist any obstruction at the orifice of the pulmonary artery. It is true that the orifice measured only two inches and seven-eighths in circumference, whereas Dr. Peacock's researches show that its average size in women is nearly three and a half inches; but, on the other hand, the normal relation of size was found to exist between the aortic and pulmonary orifices, and the small size of both may probably be accounted for by the girl's diminutive stature and imperfect development. Again, the large cavity in the left lung, which was surrounded by very dense tissue, immediately overlaid the mass of enlarged and indurated glands by which the pulmonary artery was closely invested, and the lung itself was, as we have seen, firmly adherent both to the pericardium and to the wall of the thorax. This condition of the neighbouring parts involved, in my opinion, some displacement of the pulmonary artery, and also some pressure on its outer wall, sufficient to have obstructed the passage of the blood through the vessel, and thus to have produced both thrill and bellows murmur in the manner I had conjectured.

Regarding the cause of the humming sound, which immediately followed the bellows murmur, I could form no satisfactory theory during life, and, even after post-mortem examination, it is somewhat difficult to explain. I am, however, inclined to think that it was produced by the passing of the stream of blood from the aorta through the ductus arteriosus into the pulmonary artery. That the blood did pass in that direction I feel justified in concluding, from the entire absence of cyanosis, and from the larger size and the funnel shape of the orifice at the aortic extremity of the duct. It seems scarcely possible that the blood should have flowed over the semi-lunar valve-like fold, which half surrounded the patent duct without causing a murmur, which would of course follow the systole; and it is therefore to the presence of that fold, which was of course undiscoverable during life, that I now attribute the existence of the humming murmur.

With reference to the patency of the ductus arteriosus, Dr. Peacock, who has seen the specimen, suggests that it may have been prevented from closing by the constriction of the aorta beyond the left-subclavian artery; for the constriction, though not very considerable, is situated just at the part at which the vessel is sometimes found, in such cases, entirely obstructed.

XXXIX.—*Subcutaneous Osteotomy.* By C. F. Maunder.

Read May 12, 1876.

UNTIL comparatively recently subcutaneous section of bone has been scarcely a recognised operation. Mr. Brodhurst, Mr. L. Stromeyer Little, Mr. William Adams, and Mr. Gant (I have just learned), have given a stimulus to it in this country; while Professor Volckmann, of Halle, has practised it with great success in Germany.

Operation.—Following the method suggested by Professor Volckmann, I used chisels and mallet for the section of the bone. Three chisels are recommended, of which the largest is used first, the smallest last, to prevent the tool from becoming too firmly fixed in the bone. In this way bruising of the bone is reduced to a minimum, inasmuch as the first prepares the way for the second, and the second for the third. By this means, in three out of the four cases, the bone having been nearly cut through, the division was completed by manual force. In the fourth instance the chisels alone effected the section, requiring between thirty and forty blows with the mallet. In one case, that of John F., æt. 21, the edge of the chisels chipped very much; and to this, associated with the free bleeding, may be ascribed the absence of primary union which occurred. These chisels were improperly made. They must be of 'cold' iron. I have said the widest and thickest chisel is to be used first, and this is to reach the bone through a wound in the soft parts, made, best, with a double-edged knife of relative size to the chisel, but slightly wider. Having determined upon the point of section of the bone, the position of the limb should be well secured by assistants, whilst the soft parts at the intended seat of puncture are to be well drawn to one side, and so held firmly by an assistant until the operation is completed. By this means a wound is made in the skin which, when the parts are released, does not communicate directly with the wound in the bone. As soon as the point of the knife touches the bone the periosteum must be cautiously but sufficiently divided with it, and then, using the blade of the knife as a guide, the chisel is to be glided along it to the bone. The knife having been withdrawn, the chisel is to be driven into the centre of the bone, when, by altering the direction of the instrument, the circumference as well as the centre is

divided. The chisel already in the wound should always be used as a guide to that which is to replace it.

The operation is now complete.

The wound may, or may not, be closed with a catgut suture; and a compress and strapping, as in tenotomy, are firmly applied. The limb should now be put up in the apparatus prepared for it—an interrupted long splint, for example—and in the desired position, and be so maintained until bony union has taken place. As soon as the patient has been returned to bed a sand-bag should be introduced between the interruption in the splint and the thigh, so as to give support and exercise compression upon the soft parts about the wound. By this means oozing of blood into the track of the wound will in great measure be prevented.

This operation necessarily produces for the moment a compound fracture, but which may doubtless in a great majority of instances be converted into a condition equivalent to a simple fracture—a condition not unfrequently established in the practice of surgery in the case of compound fracture, the result of accident. Of my five operations (one done with the saw), three were thus converted, while in the other two one great obstacle to primary union of the soft parts in the case of the child was her restlessness and wilful disturbance of the splint. In the case of the young man the splintering of the chisels and the free bleeding were sufficient sources of irritation to prevent primary union.

I propose to draw your attention to five operations, performed on four patients—all that I have done. In each case the femur was the bone involved. I will mention them in chronological order.

Case I. (Reported by Mr. John Job, H.S.)

Elizabeth L., æt. 12, was admitted under my care May 19, 1875. The history is that four months ago the patient was quite well, when she caught cold, and was laid up with rheumatism. Soon afterwards the pain settled about the right hip chiefly.

As she lies in bed she is 'all of a heap,' with her legs flexed on the thighs, and the thighs at less than right angles to the pelvis, the right thigh being adducted and rotated inwards; it is also about 2½ inches shorter than its fellow, and the head of the femur can be felt on the dorsum ilii.

May 26.—The patient was put under the influence of chloroform, and extension attempted. Very little could be

done with the right extremity, but the left yielded somewhat, and a 5 lb. weight was attached to it. Mr. Maunder said that he expected to be able to extend the left extremity thoroughly by means of mechanical appliances only; but the right thigh would require tenotomy at least, possibly section of the bone, to bring it down.

June 2.—Mr. Maunder divided the tendons of the adductor longus and rectus.

5th.—A 7 lb. weight applied to the right leg, and that on the left increased.

Operation, July 7.—Very little benefit having resulted to the right extremity, and the patient, being under the influence of an anæsthetic, Mr. Maunder cut down upon the right femur, just below the trochanters, with the point of a scalpel; then with three chisels, each smaller than the other, and using the largest first, the bone being almost severed, was broken through by manual force. The thigh could then be brought perfectly straight, and into its natural position. About a dessert-spoonful of blood was lost. The wound was closed with a compress and strapping. An interrupted long splint was applied.

July 8.—Weights were again attached to both limbs. The patient is feverish this morning. Evening: temp. 103°; pulse, 144. No pain about operation-wound, unless the limb be moved. The child meddles with the splint.

11.—Discharge of pus from the wound for the first time. Scarcely any swelling about the hip.

13.—The left knee-joint had become rapidly swollen, with effusion into it, and tender. Slight discharge from hip wound.

18.—Knee more swollen. Two ounces and a half of seropurulent fluid were drawn off by the aspirator from it.

22.—Three ounces of purulent fluid were removed by the aspirator.

24.—The left extremity was placed on a McIntyre splint, and Mr. Maunder laid open the knee-joint on the inner side by a free incision, giving exit to pus. Very slight discharge from the operation-wound.

29.—Scarcely any discharge from the operation-wound. Purulent fluid flows from left knee.

Aug. 9.—Free discharge from left knee. Operation-wound all but closed.

12.—Operation-wound absolutely closed, and the patient can raise the extremity from the bed, indicating that union has occurred between the ends of the bones.

P.S.—In Mr. Maunder's absence from town the mother of the patient chose to remove her child from the hospital, and I understand she has since died.

Case II.*

M. A. J. was admitted for the second time on Feb. 2, 1876. She was the subject of hip-joint disease, resulting in firm fibrous anchylosis at a right angle. In June 1874 she first came under my care in a similar plight, but with the addition of a chronic abscess on the outer side of the thigh, as is seen in the photograph.

First Operation.—At that period I divided the neck of the thigh bone with a saw, and also certain shortened muscles. These wounds healed primarily, but the patient was in no way benefited by the operation. I sent her out of town twice; the chronic abscess dried up, and she returned to me in good health. During the interval the head of the bone had disappeared.

Second Operation, Feb. 9, 1876.—In order to shorten the limb as little as possible, and at the same time to be independent of the fixed and displaced upper extremity of the femur, I divided the bone in this case immediately below the lesser trochanter, as I judged. It was now possible to place the child flat on its back, and the lower extremities side by side. The wound was closed with two superficial catgut sutures, compress, and strapping, and the child was returned to bed with an interrupted long splint applied. Evening temp. 99·4°.

10.—Temp. normal. Appetite good. Has no pain.

14.—Temp. normal. The pad was removed, and the wound found to have healed by primary union. The sutures were then withdrawn.

April 1.—The patient continued without a bad symptom, and in due time bony union occurred.

I was tempted to undertake this second operation, knowing the child's capacity for resisting operative interference, having previously divided the neck of the bone with impunity.

You will see the child now standing erect, and its lower extremities parallel.

* See clinical lecture by Author, 'Medical Times and Gazette,' Dec. 25, 1875, p. 701.

It was the failure of Mr. W. Adams' operation to correct deformity, both in this case and in a similar one, operated upon by Mr. Adams himself a week later, that led me to consider how otherwise to act. The outcome was the operation described, and illustrated with such gratifying results.

The following cases are reported by W. H. Habgood, house surgeon.

Case III.

John F., æt. 21, was admitted under Dr. Down's care, Jan. 9, 1876, and transferred to Mr. Maunder. This patient was the subject of disease of the left hip-joint, which had existed for seventeen years, and which had run on to firm fibrous anchylosis. The upper extremity of the bone was displaced upwards, while the thigh was fixed almost at a right angle to the pelves, adducted and rotated inwards. This extremity was two inches shorter than its fellow. An old sinus running in the direction of the acetabulum still remained open on the outer side of the thigh, and as the patient had come into the hospital with the object of having this healed, Mr. Maunder took this opportunity of remedying his deformity.

Feb. 9.—Osteotomy was performed. In this case, by reason of the presence of cicatricial tissue, Mr. Maunder divided the bone at a point lower than in the above instances, and also from behind forwards, in order to avoid it. Unhappily the edge of the chisels chipped, and probably fragments of steel remained in the bone. There was also free bleeding. The wound was closed with compress and strapping. The limb could now be brought into a position parallel with its fellow, the lordosis disappeared, and a straight splint was applied.

10.—Temp. 103°; pulse 108. Complained of pain at the wound, and is thirsty.

11.—Temp. 100·6°. Less pain.

13.—Oosing of sanguino-purulent fluid from under the compress. Some tenax is to be substituted for this latter.

16.—Temp. 98·6°. Feels very comfortable. His appetite is good, and he sleeps well. He has no pain. Slight discharge of pus.

March 26.—There was a sudden rise of temperature today, and a small abscess was found between the site of the operation wound (which had healed) and an old sinus. The abscess was opened.

27.—Very comfortable.

April 10.—The splint was removed to-day. The bony fragments have united. The left lower extremity is three inches shorter than its fellow.

The orifices of two old sinuses are open and discharge thin pus.

Case IV.

Richard H., æt. 30, a sailor by occupation, was admitted under Mr. Maunder's care Feb. 22, 1876. Some seven or eight weeks ago, whilst at sea, he had fallen from a height on to the deck of his ship, sustaining a compound fracture of the left arm and an injury to the left thigh. The captain applied splints to the arm (which had done well), but did nothing to the thigh.

On admission, the left foot was found to be much everted, the outer edge of it lying flat on the bed when the patient was recumbent. The left lower extremity was two and a half inches shorter than the other. There was great thickening and deformity about the junction of the middle and upper third of the femur, doubtless the result of fracture. The man stated that the leg was perfectly useless to him as a sailor, by reason of the extreme eversion of the foot, and was most anxious to have something done to remedy this condition.

Feb. 25.—Mr. Maunder proposed to try and re-fracture the thigh (with a view to inverting the foot afterwards), but failed in the attempt. The patient was greatly disappointed at this failure. Mr. Maunder then explained to him the operation of osteotomy, and the man eagerly accepted it.

March 1.—The operation was performed to-day, the thigh-bone being divided about five inches below the top of the great trochanter, and, as Mr. Maunder judged, just below the seat of fracture. The wound was washed out with carbolic water and closed with a compress and strapping, as after tenotomy. The foot was now carried from a state of eversion to one of slight inversion, and so fixed on a long splint.

April 1.—The patient's temperature never rose to 100°, and was only twice above 99°. The wound healed by scabbing. No suppuration.

On the third day after operation the patient was hungry, and asked for a chop.

10.—The splint was removed to-day, and the bone found to have united. The eversion is entirely corrected, and the patient is delighted with the result of the operation.

He declared that he had never had pain or discomfort, nor been disturbed a single night since the operation.

Comment here is scarcely necessary.

An accident had deprived a man of 30 of the possibility of following an occupation and means of livelihood to which he had been educated. The operation has restored him to usefulness.

In contemplating osteotomy in reference to the upper extremity of the femur, the point at which the bone is to be divided must depend upon the altered and relative condition of parts. Mr. Wm. Adams' operation (section of the neck of the thigh-bone) appears to be applicable to cases of ankylosis and deformity in which the head of the bone remains in the acetabulum, both without material loss of substance and also in the absence of much surrounding thickening about its neck. On the other hand, if there be great thickening requiring an extensive use of the saw, so as to leave large surfaces of sawn bone in apposition, this extent of surfaces alone will prevent a restoration of the extremity to the desired position, and small benefit only will result from the operation.

Also my three cases of hip-joint disease associated with more or less loss of substance, displacement of femur, fixity of its upper extremity by fibrous ankylosis and shortened muscles and distortion of the limb, are not suited to it, as was proved by the first operation on Case II., where the deformity could not be remedied by it. Here it is that section of the bone below the lesser trochanter will make the surgeon quite independent of the fixed upper end of it, and will allow him to place the extremity in any position he may think fit, and insure the greatest prospective benefit to his patient. Thus it will be evident that the large majority of cases of severe deformity resulting from disease of the hip-joint will be best remedied by division of the thigh-bone at some point below the lesser trochanter, whilst a minority will still remain best suited to section of the *neck* of the bone.

I think I am justified in saying that the three patients whom you have before you this evening illustrate the value of the operation described, and the result is that they who were previously burdens upon can now become useful members of society.

XL.—*A Case of Intestinal Concretion passed per Anum.*

By Alfred Leggatt. *Read May* 12, 1876. *Communicated by the President.*

L. D., a female child, æt. 3, rather feeble, but fairly healthy. Usually resident in London, but spending the summer and autumn of 1874 at Ascot. Had for a month been unusually constipated and deficient in appetite. On Dec. 6, 1874, at 2 A.M., awoke with vomiting, which continued at short intervals till 2 P.M. At 11 to 12 A.M. had two solid motions, followed by frequent loose stools and some abdominal pain, which was said to be low down. At 6 P.M. the temperature was 102° F. The child was drowsy and torpid all day, taking no notice unless roused.

Dec. 7.—Had a restless and distressed night. Motions every hour, with some pain and tenesmus. At 10.30 A.M. the temperature was 99° F.

At 1 P.M. she was seen by Mr. Leggatt with Mr. Brown, of Ascot, who had charge of the case. The child was awake and taking notice; pale and feeble. Tongue thickly coated and white. Abdomen flat, soft and free from pain and tenderness. Motions still frequent, consisting of greenish mucus, with a small quantity of yellow feculent matter, flakes of white curd, and here and there a streak of blood. Pulse 120; temp. 100° F. The child was fed by small quantities of milk and lime-water, with arrowroot and rice-water.

8.—At 2 A.M. an arrowroot enema, with 3 minims of laudanum, was given. The diarrhœa was arrested for fifteen hours; but at 10 A.M. severe abdominal pain, with increase of fever, set in. Temp. 104° F. The pain was soon relieved by a linseed and laudanum poultice, and ceased altogether on the return of the diarrhœa at the end of the fifteen hours, that is to say, at 5 P.M. At 10.30 P.M. (when she was again seen by Mr. Leggatt) she awoke out of a sound sleep of a couple of hours. No pain, tension, or tenderness of abdomen. Motions less frequent; contain more feculent matter. More food taken. Temp. 99° F.

9.—Improving.

20.—Passed a solid concretion without pain.

11.—Diarrhœa subsiding.

16.—Child well.

The concretion measured three-quarters of an inch in

length, three-eighths of an inch in breadth, and a quarter of an inch in depth.

The following is the result of the analysis made by the late Mr. Moore, of St. George's Hospital:—

In 100 parts:	
Organic matter	22·0
Ash	78·0
Trace of fat	00·0
	100
In 78 parts of ash contained:	
Bone earth	30·0
Alkaline phosphates	8·2
Chlorides, &c.	39·8
	78·0

A microscopical examination showed the organic matters to consist of starch-granules, and wheat-husk. A slight trace of fat was also present, and a section of the mass presented a laminated appearance.

Remarks.—Before the above illness the child had been subject to occasional feverish attacks, with pale, almost white motions. Since the illness she has had, at intervals of several months, three attacks of vomiting, with white motions, but without fever. Each attack lasted two or three days. For many months before the illness the child had eaten brown bread daily.

The concretion has the appearance of similar bodies, which have not unfrequently been found after death in the appendix vermiformis, or in connection with ulceration of that organ and its consequences.

The microscopical examination and the analysis, taken with the fact of the child having been in the habit of eating brown bread, appear to afford an illustration of the mode of formation of these concretions. But at present we are not, as far as I am aware, acquainted with the condition which determines and initiates their formation.

It is difficult to ascertain the share, if any, which the concretion had in producing this illness; other causes, apparently adequate, were present—viz. habitual constipation, aggravated possibly by the iron of the Ascot water, a bad drain-smell in the house, and the setting in of cold weather.

On the other hand, the presence of the concretion may have been, as is common in such cases, the cause of the constipation and subsequently of inflammation in the mucous membrane around, and so may have started or aggravated

the illness. In this condition of things the severe vomiting and purging probably dislodged the calculus from its nidus. It must, however, be remembered that there was not, from first to last, any noticeable pain or tenderness in the region of the cæcum.

XLI.—*Cases of Skin Disease.* By Mr. Balmanno Squire. *Read May* 26, 1876.

A.—A LIVING specimen of the comparatively rare and so-called Lupus erythematosus, or sebaceous Lupus or Bat's-wing disease, treated by the surgical process of Prof. Volckmann, of Halle; namely, by scraping away the diseased portion of skin by means of a small steel spoon, having a sharp edge.

The patient, a woman æt. 42, who had recently been under the care of Dr. Manassei, of Rome, was admitted a few days since as an in-patient of the British Hospital for Diseases of the Skin, under the care of Mr. Squire. The disease was limited to the skin of the fore part of the lower two-thirds of the nose, but it occupied the greater part of that space. On a side view, it is seen that only the fore part of the lower two-thirds of the nose is diseased; the alæ of the nose are quite unaffected, the centre of the affected area being cicatricial, and the circumferential part presenting the well-known characters of the disease above-named; that is to say, a reddened, slightly elevated surface, abruptly limited at its outer margin, and studded with numerous pin-head sized rounded and slightly prominent grey-coloured comedones, which felt harsh to the touch, and on evulsion by means of the point of a pin were found to have a short conical root or prolongation, fitting into a corresponding minute pit in the skin. The lobes of both ears are also slightly affected by the disease, and also the upper third of the hinder edge of both ears, chiefly the left ear.

The patient had been affected with the disease for about two years on the ear, but only about a year and a half on the nose.

On May 22 Mr. Squire mapped out the part of skin to be scraped away by means of a solution of black sealing-wax in rectified spirit, applied by a small camel-hair brush. He then proceeded to freeze the nose by means of the ether-spray apparatus, and then at once scraped away the superficial

part of the superficially diseased skin. The bleeding was readily arrested by pressure applied to the nose by the fingers.

The necessity of first mapping out the disease, by painting it, is occasioned by the fact that when the skin is frozen all trace of the margin of the disease becomes obliterated, the frozen skin having a perfectly uniform appearance whether diseased or not.

When the nose has to be acted on by the ether spray, it is furthermore necessary to plug both nostrils with pieces of oiled sponge, and also to shield the mouth by an awning of vulcanised india-rubber sheeting, the upper edge of which is drawn tightly over the upper lip just below the nose. If these precautions be neglected, the *compound anæsthetic ether*, whatever precisely may be its composition, is apt to prove a dangerous adjuvant, producing very speedily alarming symptoms of asphyxia. In a case which occurred in the north of England a year or so ago, and which has been reported, the 'compound anæsthetic ether,' was imprudently used for inhalation in place of 'ether,' and death ensued. However, with the precautions above described, it may be safely employed to freeze the skin of the nose; but even then a partial asphyxia is apt to be produced, owing doubtless to a slight displacement of the protection provided. The patient ought therefore to be carefully watched when the ether spray is thus used. The wound is healing satisfactorily.

B.—Five living specimens of Lupus vulgaris operated on by Mr. Squire's modification of Prof. Volckmann's process. These cases are at present in-patients of the British Hospital for Diseases of the Skin, under Mr. Squire's care. Volckmann's plan consists of scraping away the absolutely rotten and friable portion of diseased skin (nodular lupus deposit) by means of a steel spoon with sharp edges, the patient being under chloroform; and then (when the wound has healed), of setting up traumatic inflammation of the circumjacent skin, affected with molecular-lupus infiltration, by numerous punctures inflicted with the point of a somewhat narrow-bladed lancet, repeating the latter operation (under chloroform) at intervals of a fortnight. Mr. Squire employs a much smaller sharp-edged spoon than Volckmann's, namely, one of about one-quarter the size of Volckmann's, and also another spoon of about one-sixteenth the size of Volckmann's, as enabling greater precision to be obtained in the draughtmanship of the operation, and so greater conservation of the skin of the face (the commonest situation of lupus); and yet the small

spoons are found by him to be sufficient for dealing in detail even with an extensive area of the disease. Then Mr. Squire, in place of the puncturation of Volckmann, which is rather an uncertain operation as regards uniformity in the effect produced, prefers to scarify the skin with regular linear parallel incisions, spaced uniformily about one-sixteenth of an inch apart, and at each successive scarification he veers the direction of the parallel incisions, so that each succeeding set are oblique to the direction of the preceding set. The instrument used by Mr. Squire for this purpose is an ordinary cataract-needle, the head of which is however about four times the usual minute size. Then for ensuring unifomity in the draughtmanship of the incisions, Mr. Squire prefers to effect anæsthesia of the affected skin by freezing it rather than by the administration of chloroform, since when frozen the skin does not bleed when cut, and in this manner the accurate and regular draughtmanship of the incisions is not defeated by a flow of blood from the very first cut.

Case I.

A girl, æt. 22, from Guildford. Duration of disease at admission to hospital two years and nine months. Disease affects the whole of the lower third of the nose, including the alæ and the under surface of the nose, and extending upwards into the cavity of the nose for a short distance along the lining mucous membrane. The affected surface was covered by a thick greenish scab, which on detachment disclosed soft, pale, flabby, uneven granulations, discharging an ichorous pus. In this case, with a view to conservation of tissue, scarification alone has been employed with as yet a most satisfactory result, the tissue having become firm, even, and non-discharging. Although it is still reddened, the sore has quite skinned over with a thin cicatrix, and no additional loss of tissue has eventuated.

Case II.

A girl, æt. 17, from Baldock. Duration of disease since infancy—namely, as far as she knows, since the age of two years. It has spread more rapidly during the last three years. Disease affects the left cheek only, the patch of disease measuring 2½ inches vertically by 1½ inch horizontally. In this case scraping under chloroform was the first operation, followed subsequently by a repetition of scarifica-

tions under the ether spray. A fortnight ago all traces of disease (excepting the scar left by it) had disappeared, saving only two minute nodules of Lupus. These, under the ether spray, were five days since gouged or cut out by means of the sharp spoon. The spots are now healing.

Case III.

A girl, æt. 16, from Brentford. Duration of disease two years. Area occupied by the disease the same as in the first cited, namely, the lower third of the nose, only that the left alæ of the nose is at its outer part partially exempt. The affected surface is covered with a thick greenish scab, which on detachment discloses the same condition of skin described in Case I. This case, with a view to the conservation of substance as the chief object to be aimed at, has been simply treated by repeated scarification under the ether spray, with the result of preserving almost perfectly the natural shape and size of the feature affected, and of attaining a firm, smooth solid substance, well skinned over, and presenting the disadvantage merely of a red nose, as if chilled by exposure to a cold wind. The patient is still under treatment. In this case, as in the first, the patient was at separate periods scarified on the affected part of the interior of the nostrils, as well as on the exterior surface, but in every instance quite painlessly. On every occasion the incisions healed perfectly in between three and ten days, and within between two and three weeks left no trace whatever of their having been inflicted.

Case IV.

A woman, æt. 28, from Tunbridge Wells. Duration of disease six years. Area occupied by it, the lower part of the nose and both cheeks. The nose is affected, for its lower two-thirds, the alæ, and lower part of the septum having been completely destroyed by the disease, so that the lower third of the nose has irrevocably disappeared. The left cheek is extensively affected by a large continuous patch of the disease. The right cheek is affected to a much less extent by smaller isolated patches. In all of the above-named situations the character of the scab and of the surface covered by it are as already described above in the cases of other patients. The patient, after various other plans had been tried at the hospital without effecting a satisfactory

result, was chloroformed, and the friable portions of diseased skin scraped off. The result of this procedure was to effect an apparently complete cure of almost the entire area of the disease, which cicatrized in a satisfactory manner. After a short time it became, however, apparent that at certain spots on the margins of the original patches the disease has not completely become annulled. These places were accordingly scarified under the ether spray, and the patient was kept for some time under observation. Recently, however, some small isolated nodules have become developed at some little distance from, that is to say quite beyond, the original area of the disease. These, about five days ago, were accordingly scraped out under the ether spray. The places are now healing.

Case V.

A man, æt. 33, from Leeds. Duration of the disease six years. Area occupied by the disease, the lower two-thirds of the nose, and both cheeks in an equal degree. In this case, however, the greater part of the disease had already succumbed to treatment of a different kind; only isolated fragments of the original patch now remain. This was brought about by a long-continued and vigorous application of lunar caustic (in the stick)—an assiduous rubbing of the diseased surface with the solid nitrate of silver. This kind of cauterization was persevered in for nine months, ending March 1875. During this period he was thus cauterized altogether about seventy times. He was not perfectly well when it was discontinued. This plan of treatment the patient describes as unquestionably beneficial, but horribly painful, very much more painful than the endurance of Mr. Squire's operations on him. The treatment by lunar caustic has, however, conferred on the patient an irremediable disfigurement of a different kind. Over the whole of the area so treated, that is to say over the whole of the greater part of the front of the face, his countenance has acquired a deep slate colour, which gives the patient a somewhat startling appearance. The margins of the alæ of the nose, as well as the edge of the septum, have become destroyed, with the exception of a few small patches of disease on the cheeks—patches that seem to have developed themselves by the extension of minute spots that have escaped treatment by the caustic. The disease is now chiefly confined to the cutaneous margins of the remains of the nostrils and to the mucous

membrane lining of the nostrils. The portions of diseased surface which the patient presented were treated in the manner already described, first by scraping off, and subsequently by scarification, the affected mucous membrane of the nostrils being as vigorously treated in this manner as the affected skin. The interior of the nostril and its margin was last scarified on May 22. The patient had before this almost completely recovered. The minute cuts last made are nearly healed.

Case I.

(Of Cases of Psoriasis treated by India-rubber.)

A boy, æt. 18, a Jew, from New York, has been subject to psoriasis since the age of 14, having experienced in all four separate attacks of his disease.

His first attack, which commenced about the age of 14, lasted about five months.

His second attack began at the age of 16, and lasted two months.

His third attack began at the age of 17, and lasted seven weeks. For this attack he was admitted in the Boston Hospital (U.S.A.), and was there cured by frictions with Huile de Cade and olive-oil in equal proportions. He was then free from his disease for a few weeks, which however soon reappeared, and has lasted since then, namely, from December 1875 till his admission here at the British Hospital for Diseases of the Skin.

March 23, 1876.—Admitted in-patient at the British Hospital for Diseases of the Skin. He is now covered pretty generally with patches of psoriasis. His head, forehead, and eyebrows are completely incrusted with thick nacreous incrustations, deeply fissured here and there with painful bleeding cracks. The disease is abundantly distributed in large patches over the trunk at both back and front, and on the lower limbs, but is comparatively scanty on the arms.

Seven days after his admission the patient commenced wearing india-rubber underclothing, being clothed in a complete suit, consisting of shirt and drawers. These garments he continued to wear night and day for six days, at the end of which time he was perfectly well of his disease over the trunk and limbs, that is to say the disease had completely disappeared from those portions of the body which had been covered by the underclothing. The disease at this time con-

tinued as before, unchanged on the head, forehead, and eyebrows. Three weeks after his admission he commenced wearing a vulcanized india-rubber cap, which was pulled over his eyebrows in evening and at night, and in daytime whenever he was indoors.

Cap was worn in all about seven weeks.

April 24.—(About four days after beginning cap.) Applied vaseline to his head whenever the cap was off, *i.e.* during greater part of day. Continued in this way for about three weeks.

The reason he did not wear the cap continuously night and day was because he objected to be seen about in it; the vaseline was consequently employed to prevent the scalp becoming dried up and stiffened when the rubber was removed. From this date also (April 24) till his dismissal he used to his eyelids, which have been from childhood affected with ophthalmia tarsi, Hydr. oxid. flav. gr. ij, adipis ℥j, with much benefit, but not so as completely to cure them as yet. Then, since the cure of the eruption seemed here to hang fire, he used vaseline with tar (proportions being the same as in the Pharmacopœial tar ointment); then he objected to this as being too 'drying' in its effect.

May 10.—He had in place of the tar ungt. an ointment of creaosote ʒ ij to ℥.

17.—Had vaseline with tar (equal parts). This was not greasy enough, and matted the hair together so that he could not apply it easily.

24.—Hyd. iod. rub. gr. xv, ol. amygd. dulc. ♏. xx, ung. simplic ℥j. Used this for two days only. It excited considerable redness and desquamation, and a good deal of smarting. It seemed, however, to have done a great deal of good.

25.—Vaseline again simply.

26.—Now all trace of eruption has disappeared, except a few patches at the back of the scalp. He is therefore dismissed from being an in-patient, and ordered to apply iodide of mercury ointment (qr. xv to ℥j) for a day or two.

Case II.

(*Of Cases of Psoriasis treated by India-rubber.*)

A man, æt. 24, from Bradford. The disease has lasted six years off and on, presenting itself in the shape of three separate attacks, of which the first appeared at the age of

18, the second at 20, and the third at 24. That at 18, which was the most extensive eruption of all, lasted four months. That at 20, a less copious eruption, lasted three years. That at 24, a still milder attack, has now lasted for five months. The patient entertains a belief that the first attack was cured by his wearing next the skin alternately two coloured woollen shirts, the one red the other blue. He imagines that the dye that was in these shirts effected this cure. He tried these on the second occasion, and as he believes with some slight benefit, but not much. This failure he attributes to his not having commenced the wearing of them on the second occasion in so sudden and absolute a manner as at first, wearing them on this second occasion only in a casual and irregular manner.

Patient states that during the middle of his second attack he took iodide of potassium regularly for about four months, beginning with 15 grains twice a day, and slightly increasing the dose from time to time, so that when he discontinued it the dose had become doubled, so that he consumed about an ounce of the salt weekly. This course of medicine he believes improved him notably, but quite failed to cure him completely. The period of the year at which this treatment was followed was from June to September. Now it is fair to remember that at this season of the year psoriasis as a rule, but by no means invariably, is at its minimum. The patient left off his treatment because he had an idea that he might damage his system in some way if he went on too long with it.

Patient attributes the cure of the second attack to his taking cold baths four times a week. This cured him, he says, in three weeks.

His conviction is now that some shock to the system is requisite to effect a cure, and he is averse from any gradual process.

April 8.—On admission patient has a few spots, size of half-a-crown, on the back and front of the trunk, and a few spots, shilling size, on both legs and on his right forearm. His scalp is completely covered with the eruption.

He began wearing rubber on May 13. Complete suit and cap on scalp. Three days after a general pustular acniform eruption appeared on the back. This latter has now faded considerably.

26.—Has worn rubber night and day. The spots are still obvious; they are red, but free from incrustation of any

kind. The clothing makes him sweat if he exerts himself, but not so much as it did at first.

May 8.—His eruption still continues very much as it was on April 26.

26.—He is in the same condition, or nearly so, as on the 8th. In this case the remedy seems to fail.

The patient was subsequently treated, locally, with soft soap and tar ointment, and recovered almost completely within two or three weeks; so that at his own request he was allowed to return to Bradford to continue the treatment there. No arsenic was administered.

XLII.—*Remarkable Condition of Limb after Resection of the Knee.* By R. Barwell. *Read May* 26, 1876.

Anne B., æt. 9, is an inmate of the Cripples' Home in the Marylebone Road, thus falling under my surgical supervision. It is my habit to examine, on their first entry, all the inmates, and thus came to my knowledge the fact that this child's knee had been excised about three years ago, and that the result, as it now appears, is very singular. The operation was performed at the Victoria Hospital by Mr. Cowell. Unfortunately, that gentleman tells me, the records of the institution were at that time very badly kept, so that no notes of the case are obtainable.

In showing the child I carry her into the room, and place her sitting upon the table; the leg hangs down from the knee flaccid and apparently useless; there is what is called a flail joint, *i.e.* union by a fibrous bond, more or less long, between the bones of thigh and leg. Such a condition of things makes as a rule a useless, indeed, a cumbering limb; worse than a wooden leg, hence in such cases amputation is the almost invariable resource. But this child, when I put her erect on the floor, and bid her go across the room, starts off quite well, and walks with only the amount of limp that is necessitated by the shortness of the leg. There is no occasion for a stick—not even that grasp of the thigh whereby patients with a weak knee often help themselves along. The girl has evidently perfect confidence in the security of the joint. The limb, instead of being a useless incumbrance, is even more available than if the usual and desired result—complete synostosis—had occurred.

Were it feasible, much interest would attach to an anatomical examination of this limb. I must, however, content myself with a description of its mere external peculiarities, and, as far as can be judged from them, of the disposition of deeper parts. It is of course to be presumed that the ends of the bones were cut off quite straight, but the original line of section has changed its form; the femur has become rounded somewhat from before backward, so as to form a species of trochlea with the axis from side to side; while the end of the tibia has hollowed itself into a sort of sigmoid notch. The line of this false joint may at either side be traced, running from before backward and upward, for the tibia is displaced a little backward, its axis lying rather behind that of the femur. The fibula is thrown from its normal position, and lies more completely behind the tibia. It is somewhat prolonged upward; or, to express the matter more strictly, the tibia, having lost its upper epiphysis, has grown less than the normal, while the smaller bone, remaining entire, has continued its natural rate of growth; hence its upper end projects considerably higher than the tibia; to it is attached a particularly strong and well-developed biceps tendon.

Knitting together and surrounding the bones is a strong but rather thin capsule. Running from the upper end of the fibula downwards and forwards to the lower and front part of the end of the femur, so as to support it as by a sling, is a very strong, cord-like ligament. No other ligamentous structure can be felt, but of course there lies between the bones, after the manner of an interosseous ligament, strong fibrous bands, and doubtless an arrangement exists whereby a sort of locking of parts gives to the false joint sufficient firmness to support the weight of the body. The child, however, is still small and very light; whether, therefore, as she grows older and heavier the fibrous structures will be strong enough to support her body, is extremely doubtful.

As no similar case, as far as my researches go, is on record in any part of the world, I shall continue to watch the child with care, and have thought her case sufficiently interesting to bring before the members of this Society.

XLIII.—*Acute Arthritis of the Knee-joint and Necrosis of the Entire Shaft of Tibia in an Infant Eight Months Old. Amputation. Recovery.* By GEORGE BROWN. *Read May* 26, 1876.

I HAVE ventured to bring the following case before the notice of this Society, not merely because it is one in which recovery has taken place after amputation through the thigh, but because of the very early age of the patient at the time that the operation was performed, and the great interest which attaches to the grave and rare surgical disease which necessitated the performance of the operation. As far as I can learn, this is the only case where recovery has taken place after amputation of the thigh in so young a patient.

The patient, Jane P., æt. 8 months, was brought to me on Dec. 23, 1875, apparently suffering from some affection of the knee-joint.

The mother stated that the child was quite well up to the previous evening, when she noticed that she was unusually fretful. Thinking that the fretfulness was due to teething, the mother administered a soothing powder. When washing the child in the morning she observed, for the first time, that the right knee was slightly swollen, and that the child cried whenever the leg was touched.

The following is the family history:—Is the youngest of four children, all of whom are alive. Two of them are ricketty; neither of them has had snuffles, any skin eruptions, or any affection pointing to congenital syphilis. Father states that he has always been healthy, and has never been under medical treatment since childhood; denies having had venereal disease. The mother is a very thin, delicate-looking woman, but says that she has never suffered from any illness, confinements excepted. Has given birth to four children in less than five years. Her present weak state is due to over lactation. Has never had sore throat or any skin disease.

The following are the notes as to the state of the patient when brought to me:—Is a fine, well-nourished child; has no teeth; face pale; has a very anxious expression of countenance; no signs of disease of thoracic or abdominal organs to be detected; the right knee is slightly swollen, the leg is semi-flexed, and the patient screams whenever it

is moved or touched. The right leg is hotter to the touch than the left; no fluctuation to be detected. No marks or bruises to be seen about the joint; no evidence of injury to the bone. No history of injury to be ascertained, but the mother suspects that one of the other children has struck the knee when playing with the child. Refuses all food except the breast; bowels constipated. Thinking that the knee had been injured in some manner, I ordered rest and an evaporating lotion to be kept applied to the knee-joint; also to take an aperient powder.

Dec. 24.—Patient has had a very restless night. Screams whenever the leg or knee is touched. Swelling about the knee has increased, and now extends from two inches above to the same distance below the joint. No fluctuation to be detected. There is a circular patch of erythema about the size of a sixpence on the inner side of the joint. There is also slight œdema of the foot. Face slightly flushed. Temp. 103.2°; pulse 140°. Bowels fairly open after the powder.

I must confess that at this time the case appeared to be an obscure one. The high temperature and the acute character of the symptoms led me to dismiss the idea of injury, and to believe that the case was one of acute rheumatic inflammation of the knee-joint. The swelling was exactly similar to that we usually meet with in acute rheumatism. I now ordered alkaline mixture internally, and poppy-head fomentations to the knee.

26.—Temp. 103.6°. Still in much pain. Swelling of knee continues to increase.

27.—Condition unaltered.

28.—Temperature fell suddenly to normal. The right knee is now three inches larger in circumference than the left, and there is distinct fluctuation around the joint and about three inches down the leg. The swelling is diffused. There are two or three small erythematous patches about the joint, but no 'pointing.'

Next day my friend Mr. Sebastian Gardner kindly saw the patient, and concurred with me in the opinion that an opening should be made to let out the fluid. At this time the swelling extended from two inches above the patella, almost to the malleoli. Around the calf and the knee-joint the right leg was fully three inches larger than the left. Selecting a point half an inch below the lower border of the patella, where the fluid appeared to be nearest the surface, I

made a puncture with a small trocar, but finding that the fluid was too thick to run through the cannula, I made an incision three-quarters of an inch in length, and evacuated about seven ounces of purulent fluid, containing a quantity of large curdy flakes with some oil globules. On passing my little finger into the opening, the internal surface of the tibia could be felt quite rough and denuded of periosteum from the epiphysis downwards as far as the finger could reach. The epiphysis was separated from the shaft. Ordered poultices to be applied over the wound.

30.—Patient has had a better night. Takes a few drops of brandy in water occasionally, but refuses all food except the breast. Wound has discharged about an ounce of mixed sanious and sanguineous fluid. Has a less anxious expression of countenance. Temperature normal. The wound was kept open by means of a tent of lint soaked in carbolic lotion, and dressing of carbolic lotion was kept constantly applied.

31.—Discharge less in quantity and more pus-like. Patient has slight diarrhœa.

Jan. 2, 1876.—There is now free discharge of pus. Swelling continues at lower part of the leg. About an inch above the inner malleolus the skin is inflamed, and shows a tendency to point. A probe can be passed into the wound and downwards for about four inches, and upwards about three inches. The wound was well syringed daily with carbolic acid solution and dressed with carbolised oil. A stout pasteboard splint was applied along the back of the leg with a view to keeping the knee-joint at rest, and the patient was kept constantly in bed. Temperature normal.

5.—Free discharge of pus from the wound; diarrhœa continued until to-day. This morning the patient's face is flushed, and she has vomited several times. Has a very pained, anxious expression. Foot and lower part of leg is now erysipelatous. Ordered foot and leg to be enveloped in a bread-and-water poultice. The use of the splint to be discontinued.

6.—Has had a very restless night. Has only vomited once since yesterday, but retching has been almost constant and very distressing. Takes a little beef-tea, and continues to take the breast well. Erysipelas spreading up the leg. Temp. 104°; pulse thready and very quick. Ordered lead lotion to leg, and to take one minim of tincture

of opium in a drachm of syrup of phosphate of iron every four hours.

During the following sixteen days the child remained in a very critical state, and it appeared probable that the case would end in death. The temperature ranged between 99.5° and 102.8°. The cutaneous erysipelas gradually spread up the right leg and thigh, crossed over the pubes to the left thigh, and travelled down the leg to the left foot. As the erysipelas advanced in one direction it receded from the other, and finally disappeared from both legs on Jan. 22. Meantime the wound had discharged pus freely, and the child had become very emaciated and feeble. The left leg also became swollen and the left foot œdematous, but this I attributed to the child being kept constantly in one position. At one time a swelling appeared over the right hip-joint, but it disappeared again in a few days. The erysipelas and other complications prevented my suggesting amputation before Jan. 23, when the temperature being normal, and there being no erysipelas present, I told the parents that there was a probability of a successful result if amputation were performed. It being evident that the child was gradually sinking, and that its death was only a question of a few days unless something were done, the parents consented to the performance of the operation.

Accordingly I amputated the thigh in the lower third on Jan. 25, being assisted by my friends Mr. F. H. Hume and Mr. Sebastian Gardner. Only about half an ounce of blood was lost during the operation. I adopted the lateral flap method of operation, believing that by this mode I was more likely to get primary union, it being a matter of the first importance, in the enfeebled condition of the patient, that as little drain upon the system as possible should take place after the operation. The femoral artery was tied with ordinary ligature thread, and the flaps brought together with six wire sutures. Immediately after the operation was concluded the patient became cold, blanched and pulseless, and remained in an almost inanimate condition for nearly twenty minutes, during which time we kept up artificial respiration, applied hot flannels to different parts of the body, and friction over the arms and remaining leg. Gradually the child recovered from the shock of the operation and the effects of the chloroform; and when I saw her at seven o'clock, six hours after the operation, the circulation was quite re-established, the body was warm all over, and she had taken the breast and gone to sleep quietly.

Temperature at 10 P.M. 100.2°. I gave a mixture containing one minim of tincture of opium in a tea-spoonful of steel wine every four hours. I forgot to mention that on the morning of the operation an erysipelatous blush reappeared on the right thigh and left leg, but after consultation we determined to proceed with the operation notwithstanding.

The little patient passed a good night after the operation, and appeared more comfortable the next morning. The temperature fell to 100°, and did not rise above that point afterwards. The pulse was too feeble to be counted for several days. The erysipelatous condition of the right thigh and left leg finally disappeared on the 22nd, on which day the temperature fell to normal. After the operation the child quite lost the pained, anxious expression of countenance, and never cried except when the dressings were changed. One suture was removed on the fourth day of the operation, two on the fifth, and the remaining three on the seventh, by which time the stump had almost entirely healed. The ligature came away on the sixth day after the operation. On this day a patch of purpuric spots appeared on the abdomen extending from the umbilicus to the pubes, and about two inches in diameter. Acting on the advice of Dr. Cholmeley, I gave 5 minims of liquid extract of ergot in a drachm of steel wine every four hours. Whether as a consequence or not I cannot say, but the purpuric spots did not spread after beginning the administration of the ergot. The child gradually improved in general health, and began to gain flesh within about ten days after the operation. A small sinus remained open at the upper part of the wound for nearly three months. This I found was due to the presence of a spiculum of bone, which was probably splintered by the saw from the cut end of the femur. This I removed on April 20, and the sinus closed up at once.

Before exhibiting the patient I would ask permission to make a few remarks on some of the points of interest about the case. And first as to the nature and origin of the disease.

The history of the case affords but little light on these points, and we are obliged to look to the diseased structures themselves for the information we require. On examining the amputated limb, which has been beautifully mounted by Dr. Goodhart, pathological assistant to the Museum of the Royal College of Surgeons, it will be observed that the upper epiphysis is completely separated from the shaft of the

tibia, and the entire shaft is denuded of periosteum and necrosed. There is a cavity in the epiphysis which opens by a pin-hole (through which a coloured glass rod has been passed) into the joint about the centre of the external semilunar cartilage. The articular cartilages are otherwise quite healthy, and there is only slight thickening of the synovial sac. From these morbid appearances I think there can be no doubt that the original lesion was a sub-articular abscess in the epiphysis which opened into the joint by the pin-hole in the external articular surface, and gave rise to the inflammation of the joint, for which the patient first came under treatment. Within a day or two the abscess, being unable to freely discharge itself into the joint, extended downwards to the periosteum, causing acute periostitis and rapid necrosis of the shaft of the tibia. I am supported in this view of the case by Dr. Goodhart, who writes to me as follows:—

'As far as I was able to come to any conclusion in the matter, I agree with you that there has probably been epiphysial disease first, and that it has extended upwards into the joint, and downwards to the periosteum. But I should say that it is very uncommon to get such an extension downwards, in the form of acute periostitis.

'The common course is for disease certainly to open either into the joint and so destroy that, or to excavate the tibia below the epiphysis by a more chronic process of inflammation. I think we must, therefore, infer that the epiphysial disease has been very acute, or much more so than usual, and suppuration has extended secondarily to the periosteum. It does not appear likely, considering the extent of epiphysial disease, that the periostitis has been primary, and the extension to the epiphysis and joint afterwards.'

Dr. Goodhart writes this in entire ignorance of the history of the case, which it will be allowed supports the inferences he draws from an examination of the diseased limb.

Fortunately such cases as the above are very rare, and seldom come under the notice of surgeons, except those who have extensive practice among children. Indeed, the disease appears not to have attracted the attention of English writers on surgery until within the last few years. In his work on 'Diseases of the Joints' (1861), Mr. Barwell refers to a disease of this kind, which is denominated 'acute articular osteitis;' but he states that he has never seen a case, nor found the description of one in any English work. He gives, however, the fol-

lowing extract from Stromeyer's memoir on *Osteitis articularis peracuta*: 'After violent rigors supervene pains in the joints, so severe as to entirely prostrate the patient. The pulse is small and extraordinarily quick, the tongue dry and brown, the appetite is entirely lost, and thirst extreme. The joint swells, fluctuates, and the fluctuation extends beyond the limits of the synovial membrane. The limb becomes œdematous, and an erysipelatous redness of the skin appears; sometimes gas is developed by the disorganised and putrid flesh and exudations generally. Generally, before it bursts externally, the patient dies, either from the accompanying disease, for instance pericarditis, or from the reaction of the putrid pus upon the system. Only in very rare cases can the patient recover. When the parts burst the pus is discharged, and the sloughs, together with the joint ends of the bone, come away.' Stromeyer adds: 'Happily these frightful cases are rare, but not to such a degree as to merit entire neglect in systematic works on surgery.' Mr. Barwell also gives a summary of a paper by Dr. Klose, published in the 'Prager-Viertel-Jahrshcrift,' for 1860, who saw thirteen cases within eight years, all in young persons. In his cases the disease manifested itself in the epiphyses in the neighbourhood of the large joints. Hence he terms the disease 'Separation of the Epiphysis.' In ten of the thirteen cases the knee was the joint attacked. In concluding his notice of this affection, Mr. Barwell says: 'It has not been my fortune to see any disease at all similar, nor can I find any account in English medical journals which would lead me to believe such has occurred in this country. Therefore it is apparently better to give these observations of a most distinctive and happily rare form of joint disease without further comment.'

In the 'St. Bartholomew's Hospital Reports' for 1874, Mr. Thomas Smith mentions several cases of inflammation of the large joints in young children, which have come under his observation at the Children's Hospital, and he names the disease 'Acute Arthritis of Infants.' In his cases where the knee-joint was the seat of disease, most of the patients died within a few days of the abscess being opened, although in one or two cases, where the disease appeared to be wholly limited to the joint, complete recovery took place. In the 'London Medical Record' for Jan. 22, 1873, Dr. Gee gives an abstract of several papers published by continental observers who describe a disease of the osseous system which corresponds in some of its features with that of the case now

brought before your notice. In these cases the cause was believed to be congenital syphilis, but I am not disposed to ascribe the disease in this instance to syphilitic origin. In my opinion the evidence points rather to scrofula.

This disease runs an extremely rapid course, and is very fatal. In nearly all the cases that I have been able to find any record of, the patients died sooner or later. In this case the patient was to all appearance quite well on Dec. 22, and within a week extensive suppuration had taken place, involving the joint and the whole of the leg below the knee. I opened the abscess within six days of the onset of the disease, so that very little time was lost. Had I opened the joint earlier the result probably would have been the same.

The presence of erysipelas is generally held to contra-indicate the performance of a surgical operation. Here there was well-marked cutaneous erysipelas of both legs when we operated; but as it was evident that the child was sinking rapidly, we decided to perform the operation as a last resource. The result of the case amply shows the wisdom of the course adopted.

Report on the Specimen exhibited by Mr. G. Brown.
26th June, 1876.

We, the Committee appointed to examine the parts removed in Mr. G. Brown's case of amputation for acute disease in a very young infant, met at the above date.

We found, preserved in spirit, a child's leg removed a little above the femoral condyles; the knee-joint was laid open by a transverse cut, and a longitudinal incision exposed the tibia, necrosed throughout, save about an inch of the lower end. The upper epiphysis and shaft were pretty widely separated, the edges of the chasm bearing unmistakable marks of ulcerative action. The upper end of the shaft was rough and irregular, and a small opening led into the medullary cavity. The corresponding lower surface of the epiphysis was softened and rough. In this surface, a little outside its middle, was a small hole leading into a tract which opened by two small perforations through the cartilage on the outer depression of the tibia into the knee-joint. This joint was quite or very nearly healthy; we conclude, therefore, that the openings occurred very shortly before amputation.

The course of disease was probably thus:—

Inflammation and suppuration commenced in the epiphysal junction, giving rise to severe pains and swelling in the surrounding parts. After a time pus made its way in two directions, to the surface of the bone and into the medullary canal, setting up osteo-myelitis and acute necrosis of the shaft. The pus, still finding but insufficient escape, passed afterwards through the epiphysis and articular cartilage by two minute openings, but had not had time to produce in the knee-joint sufficient disease to leave any appreciable trace.

RICHARD BARWELL.
JAMES F. GOODHART, M.D.
THOMAS P. PICK.

XLIV.—*Case of Cerebral Tumour.* By A. B. DUFFIN, M.D. *Read May* 26, 1876.

WALTER C., æt. 25, a groom, was admitted into King's College Hospital May 26, 1875.

A sober, well-nourished, powerful man, with an unexceptionable family history, denying having suffered from either syphilis or the consequences of venereal excesses.

About two months prior to admission he first became annoyed by a sense of dragging about the back of the neck and head, with occasional pains flashing from the occiput to the forehead. At the same time he experienced a deep-seated sense of aching in his orbits, as if his eyes were being gouged from their sockets. From the very first his gait became unsteady, and he had repeated attacks of vertigo. Objects seemed to swim round him, but without definite direction. He found that if he closed his eyes the vertiginous feeling was mitigated, although not arrested. At the end of the first few days the headaches so increased as to prevent sleep. They were at the outset purely nocturnal, but soon became almost continuous. He also very early noticed that his sight was failing, that he could not read small print. About a month from his earliest symptom he found that he saw double, and that one image was crossed on the other.

On admission the headache was found to have reached an agonising intensity, the man tossing about in bed, groaning and rocking his head. It never entirely left him, but

was liable to frequent exacerbations of a few minutes' duration. The attacks of giddiness were also very frequent. In them he lost all power of standing, even with assistance. In the intervals, if supported by two people, he could manage to walk across the ward, but with a staggering, drunken sort of gait.

If he closed his eyes he walked more steadily, but even then he required the assistance of two people. When lying on his back he could perform all the movements of his lower extremities with accuracy. His difficulty of vision gave an apparent hesitation to the movements of his upper limbs, but it was found that he performed all the movements of the latter well. As he lay in his bed the head was always thrown backwards. The muscles of the back of the neck and also those of the spinal mass were constantly found tense, but he could move his head in all directions if requested. The headache was stated to be relieved when the head was thrown back. He had also marked retraction of the muscles of the belly. His intelligence remained excellent till within a fortnight of his death, but subjective noises in his ears rendered it often very difficult for him to follow what was said to him. The sense of hearing was materially impaired. During the exacerbations of pain he would be so harassed by subjective noises as to fail to hear altogether. In his intervals of comparative ease he could, however, detect the ring of a tuning-fork well with both ears, whether he were tested for aerial or for skull vibrations. Sight was very defective.

When at his best he could barely decipher type 16, but the letters after a few efforts ran together. When using both eyes all objects looked blurred; he said that he saw them double, the one image being inclined upon the other. As far as could be elicited, the left image appeared the erect one, the right to be crossed upon it. The relative positions of these two images did not vary according to the position of the object looked at. They remained the same, whether the object were raised or lowered. There was a very slight right internal squint. Pupils were equal, rather large, and acted sluggishly to light.

Ophthalmoscopically.—Left Eye. Optic disc swollen considerably, outline entirely lost. Very woolly appearance over the situation of the disc. This latter could only be recognised by the emergence of the retinal vessels. Retinal veins full and tortuous, this state extending to the secondary

branches. Arteries small and constricted. The thickening and effusion extended only a short distance beyond the disc. At first there was no retinal hæmorrhage, but this subsequently ensued. *Right Eye.*—Optic disc more swollen than the left, greatly enlarged and very woolly. Retinal vessels much intercepted in their course in the disc, dipping in and out of the effusion. Scattered hæmorrhages about the disc.

There was partial motor paralysis of the right side of the face, but no loss of sensation. The muscles of the jaws acted well. Articulation and deglutition were both perfect.

The circulation was slow, the pulse at first rarely exceeding 60, often irregular, and the beats not of equal force. Nothing peculiar was observed about the respiration. Vomiting was a frequent event, and during the earlier time of his residence in the hospital was of almost daily occurrence. Tongue was foul, appetite almost gone. Obstinate constipation existed throughout. The urine was generally of high specific gravity, was free from either albumen or sugar, but contained a great excess of phosphates.

All his symptoms gradually deepened upon him; and on June 19, about three weeks after his admission, he was first found to be somewhat drowsy. His vision had so much deteriorated that he could barely discern the bystanders.

At the end of another fortnight the drowsiness had decidedly increased, and a little nocturnal delirium set in. His pulse began to quicken, and became more irregular. Even then, however, if well roused, his intelligence was found to be perfect.

The pulse continued to quicken, the delirium to increase. On July 21, two months from admission, he was for the first time observed to be generally flushed, with tache cérébrale. He was then quite blind, picking the bedclothes in a state of muttering delirium. He became gradually comatose, and died two days later. Throughout the whole illness the temperature never exceeded 99° F., and ranged generally between 97° and 98° F. During the last few days of his illness it was not followed.

On post-mortem examination the arachnoid sac and subarachnoid spaces were found dry, the convolutions rather flattened, the veins of the surface of the brain loaded. The ventricular cavities were found distended by a large amount of clear greenish serum. The veins of Galen were found greatly distended, being pressed upon by a tumour, the chief

seat of which was the corpora quadrigemina. This tumour was nodulated, irregular in shape, somewhat pyriform, the broad end lying in the third ventricle, and causing considerable divergence of the thalami. Its general dimensions were about two inches from back to front, an inch and a half from side to side, and about the same in thickness. The smaller end occupied the position of the corpora quadrigemina, but bulging towards the right end, encroaching on the right superior cerebellar peduncle. The tumour was easily detachable from the roof of the third ventricle, into the cavity of which it sent a nodule. The soft commissure was seen to be greatly stretched. A large nodule of the tumour had caused absorption of a considerable part of the right optic thalamus, which formed a sort of shell, in which the nodule lay as a kernel. On raising the tumour it was found to be attached to what would correspond to be the situation of the posterior commissure and the pineal gland. The pineal gland was not distinguishable, and it seemed possible that the tumour had its origin from that structure. Posteriorly the tumour had grown and penetrated through the aqueduct of Sylvius, raising the corpora quadrigemina and stretching them, so that their position was only indicated by a smooth layer to which the brachia could be traced. The tumour could be almost enucleated from its position here, especially on the left side. The left superior peduncle of the cerebellum was quite free, and apparently not involved in the mass. On the right side the tumour was more adherent, and seemed to merge with the right superior peduncle of the cerebellum, which, however, could be isolated to a considerable extent. There was no attachment of the tumour to subjacent structures. The valve of Vieussens was so stretched as to be scarcely recognisable, but the fourth nerves were capable of being traced quite free to this part. The middle and inferior peduncles of the cerebellum were not involved, nor were the parts in the floor of the fourth ventricle, although the inferior nodule reached almost as low as the decussation of the calamus scriptorius.

The effect seems to have been especially pressure and atrophy of the corpora quadrigemina and of the right superior peduncle of the cerebellum, with pressure and partial absorption of the posterior half of the right optic thalamus.

The tumour seemed to spring from the pineal gland. It had the ordinary structure of a glioma, and was solitary in

the brain. No other part of the body presented anything remarkable.

During life the unsteady gait and the vertigo, the constant retraction of the head and the rigidity of the spinal muscles, the extensive implication of hearing and the early and advanced optic neuritis, had led me to believe the tumour situated in the anterior part of the cerebellum, pressing downwards on to the floor of the fourth ventricle and forwards so as to involve the corpora quadrigemina. As the event proved, the tumour lay somewhat in advance of the spot indicated, and the cerebellum proper had entirely escaped.

Notes on Dr. Duffin's Case of Cerebral Tumour, by Professor Ferrier.

In this case, as in cases of cerebral tumours in general, the difficulty is to differentiate between the direct and indirect effects of the lesion. Though the corpora quadrigemina and the right superior peduncle of the cerebellum were the parts more immediately pressed on by the tumour, the question is how far the symptoms observed during life, though sufficiently conclusive of cerebral tumour, indicated the exact locality of the disease.

From the situation of the tumour on the corpora quadrigemina impairment or abolition of vision might be naturally inferred, yet this effect might be accounted for quite independently of the localisation of the disease into the region of the corpora quadrigemina, by mere mechanical disturbance and choking of the retinal veins, owing to abnormal intracranial pressure, a consequence of cerebral tumours in general. It is impossible to say in this case how far the affection of vision was a direct or indirect result of the disease.

That vision was affected in some special manner is, however, evident from the fact that the vertiginous sensations and disorders of equilibrium were more marked when the eyes were open than when they were shut.

The vertigo and disturbance of equilibration, with the tendency to retraction of the head, seem to be special features in this case, as distinguished from those of cerebral tumour in general.

Such symptoms are usually found associated with tumour in the middle lobe of the cerebellum, and the question is how

far tumours in that region produce these symptoms directly or indirectly by pressure on the corpora quadrigemina?

The physiology of the corpora quadrigemina is as yet but imperfectly understood, and tumours of these parts are not capable of being made the foundation of trustworthy conclusions, from the reasons above mentioned. Experiments on the corpora quadrigemina show that the results of lesion of these ganglia differ according as the lesion is an irritative or destructive one.

Destruction of the corpora quadrigemina annihilates vision and irido-motor action. Some physiologists say that no general motor disturbances result from injury of these ganglia; but the experiments of Serres, Cayrade, Goltz, and myself, indicate that very marked disorders of equilibrium ensue, though there is no absolute motor paralysis. Irritation of the corpora quadrigemina shows itself in dilatation of the pupils, retraction of the head, and tendency to trismus and general opisthotonos and rigidity of the limbs when the irritation is powerful.

It is not easy to determine whether in this case the effects of the tumour were altogether irritative or destructive, though the tendency to retraction of the head might be taken to indicate some degree of irritation.

The symptoms on the whole are quite in harmony with the results of physiological investigation into the function of the corpora quadrigemina, though they are scarcely precise enough to establish absolute regional diagnosis.

XLV.—*On a Case of Diphtheritic Paralysis, simulating extensive Lung Disease.* By J. Pearson-Irvine, M.D. *Read May* 26, 1876.

J. W., a little girl æt. 6 years, was first seen by me at Charing Cross Hospital, as an out-patient, on Saturday, May 22, 1875. The mother complained, on the child's part, of symptoms of bronchitis, which had lasted a fortnight, and stated that the child was subject to attacks, though all previous ones had differed from the present. A strong family history of bronchitis was given. A sister of the patient died of it when six months old, and two brothers suffered from it after the least exposure. The father, when young, had fears of consumption, and undertook a voyage to Ceylon, because

of a cough, from which he completely recovered. The further family history of any consequence was, that a brother, æt. 4 years, died about six weeks previously, the cause of death being certified as scarlet fever. Like all the other children, the patient had about the same time a sore throat, but all recovered very quickly, and were perfectly well in a week or so. At the date of the onset of this attack of bronchitis the patient was in excellent health, strong and vigorous, and getting stouter than she had been for some time.

Cough commenced her illness; it came on somewhat suddenly, was short and frequent, and there was considerable shortness of breath, especially at nights. The cough was troublesome also at nights, and from the first almost the sputum, never great in quantity, was frothy and in yellowish masses, sometimes, the mother thought, streaked with blood. The child was almost immediately taken off her feet, and ceasing to play about, became spiritless; she being, as a rule, remarkably cheerful. She lost flesh very rapidly. For the first two or three days she was hot and feverish, and it was feared that she was becoming consumptive, as the mother said, to whom the sudden onset of the cough and its persistence, with loss of flesh, had been the most striking symptoms. The child had complained of no pain. She had slept badly because of the cough, and had been occasionally queer in her manner, especially after a period of semi-slumber. Her appetite had been bad for the last few days.

When first seen by me she was emaciated, but not greatly; had no appearance of severe illness, but a dull and peculiar expression, indicative rather of languor than distress. She had a queer look in the eyes, which was not considered strabismus. She did not carry herself erect, that is to say the head drooped; but as I had seen this as a natural condition in children, the significance of this symptom escaped me. The pulse was 65, and otherwise natural; the temperature 98·4° Fahr; respirations 14. She was breathing in a shallow fashion, and slowly, but not laboriously. There was really no marked distress in breathing. She was continually coughing, as if to clear the throat, and accomplished this without much annoyance. Nothing was expectorated. A tracheal rattle was as audible as in the last stage of an old man's bronchitis, but there was no lividity of lips or cheeks; in short, no asphyxial phenomena.

There was decided flattening of both infra-clavicular regions, with almost complete absence of movement. The

flattening was uniform, extending from one side to the other, and from clavicles as low as the third rib on each side. The appearance was as if the upper part of the thorax thus limited had fallen in, the depression gradually passing below into normal conditions. The bases expanded unusually fully, and there was a strong action of diaphragm. The consequence was that the chest had a decided pyramidal shape, the apex of the pyramid being above. A strong rhonchal fremitus existed over the whole chest, strongest above, and finest at the bases, though more protracted there than elsewhere.

There was a marked loss of resonance above and under both clavicles as low as the third ribs. The loss was difficult to circumscribe below in the mid-clavicular lines, but towards the sternum on each side it terminated at level of second space in absolute dulness—in what appeared to be an increased area of superficial cardiac dulness. There was, in fact, an entire want of lung-note over the manubrium of the sternum, and a space bounded by a line drawn from second space on the right, half an inch from the sternum, downward to the sternal end of fifth cartilage, and by a line drawn from the second cartilage on the left downwards and outwards to the exact position of the apex-beat just below and in a line with the nipple. In the supra-spinous fossæ there was what seemed to me all but absolute dulness; but the rest of the back was resonant, the bases being indeed abnormally so. I especially noticed that there was no loss of lung-note between the scapulæ nor in the juxta-spinal regions at the bases.

Every variety of bronchitic râle could be heard. No part of the chest was free from one kind or the other. At the base the râles were coarsely subcrepitant, and completely obscured the breath-sounds. At the apices, on the other hand, were audible loud sonorous râles, but though loud, not concealing what seemed to be true tubular or amphoric breathing. There was clear whispering pectoriloquy at both apices, but in the back the voice could scarcely be heard. The vocal fremitus was everywhere weak, and certainly useless diagnostically.

The heart's apex was distinctly felt in the position named. Its sounds were more than usually audible, but perfectly free from murmur or other abnormality. The sounds were equally well heard on all points of the area of dulness described.

On Wednesday, May 26, four days afterwards, the child was again brought, and it was complained that she had been

very ill since last visit. Her cough had been almost constant, of a short and hacking kind, with but little expectoration, and that only white phlegm. She had been very restless at night; in fact, half delirious, and so given to getting out of bed that she had needed constant watching. In chest signs there was no change, and the child was at the time of visit languid rather than restless (doing at once as she was bid). The temperature was normal, the pulse 60, respirations 14, and still free from distress.

A strabismus, of the left eye especially, which was turned inward, was detected; and this, taken with an increased droop of the head, led me to take a more particular history of the scarlatinal attack in the family. I ascertained that the brother who had died of scarlatina was ill—at any rate severely—only twenty-four hours, and dangerously only for about seven hours of that time. He was indeed seized with sore throat on Saturday, and seen on that day by the medical man, who pronounced the illness to be scarlatina. During the night he became much worse, towards morning was bad in his breathing, with noises in the throat—just like croup, the mother said—and died half an hour after these noises became decided. The other children, as I have said, had bad throats about the same time. The throat of the present patient, according to the mother, was ulcerated. There was no rash in any of the cases. I could obtain no history of contagion.

A further examination satisfied me that the child must have had diphtheria within the last four or five weeks. The droop of the head was decided, and certainly played a considerable part in causing the peculiar expression. The cervico-dorsal regions were rounded and smooth—the convexity was here backwards, but in the lumbar region was an exactly opposite curvature. When the child was made to bend the body, this lumbar hollowing did not disappear, and recovery of the erect posture was brought about with a sort of spasmodic jerk, as if the muscles were ataxic. The child could not extend the head, but when this was done by the observer much of the strange look disappeared.

There was deficient power in the lower limbs; no dragging, but a peculiar clumsiness not unlike that of a person in the earlier stages of a locomotor ataxy. Ten days ago the father had complained of the child's awkwardness during a walk; two or three days back the mother had noticed twitching in the limbs, and the child had complained of pains in

them. The speech, thick and uncertain, was decidedly changed from what I remembered of it on the last visit. There was no regurgitation of fluids by the nose, but the act of swallowing was imperfectly done, the patient taking cautious sips, and there being pharyngeal gurgling. The throat was filled up by a relaxed palate and uvula; the latter was straight, the palate in numerous folds. The finger could be passed over the epiglottis and palate and round the pharynx without exciting either movement or annoyance. Coughing, however, was provoked by the attempts at swallowing. There was no loss of sensation in the limbs, and no tenderness on pressure. The left submaxillary gland was distinctly increased in size, and the mother explained that during the sore throat the glands of the neck were visibly enlarged. The flattening of the upper part of the chest was pointed out to the mother, who at once said that the child previous to this illness had been remarkably full-chested.

On Saturday, May 29, there was but little change in symptoms mentioned. The voice was nasal; and the child could not pronounce her own name so as to be understood. Still gurgling on swallowing, but more sensitiveness to touch in throat. Walking still ataxic. The patient on one day had complained of double vision. Decided converging strabismus, but as if occasionally disappearing. There was now a slight but undoubted traction of face to the right side when the patient laughed, and when she attempted to blow, the lips on the left side did not come into contact.

There were the same extent and kind of dulness in the chest. A fit of coughing was brought on by the examination of the throat, and the number of râles very much diminished thereby, but nothing was expectorated. The râles—coarsely subcrepitant—were very abundant at both bases. Pulse, respiration, and temperature as before. There was no albumen in the urine.

On Saturday, June 5, a week afterwards, patient presented a striking change. The head was held all but erect, the strabismus could scarcely be found, and would certainly have been passed by under ordinary circumstances. There was still a little indistinctness in speech, but all the child said could be understood readily. She walked perfectly well. There was a marked alteration in character; she was now cheerful, and much interested in all going on. For three days the cough had entirely ceased. The change for the better occurred after a bad night, and quite unexpectedly. The

rounding of the cervico-dorsal region had all but gone, but there was still a great concavity in the lumbar region, which, taken with a persisting though decreased flattening of the anterior upper regions of chest, gave the abdomen a very full and prominent appearance. There was an increase on the previous resonance under the clavicles, and a distinct diminution of the dulness around the cardiac area. At the right apex breathing was tubular, elsewhere weak, while everywhere there was a complete freedom from râles. This of course was a very striking change. The upper regions of the thorax still acted imperfectly. On the night previous to recovery the child was much distressed by the intense heat. She had been playing about for two days prior to visit.

Fourteen days afterwards, on June 19, the patient was to all appearances quite well. All that remained of the previous symptoms was a partial loss of movement under the clavicles; but these regions were now more prominent and less dull, while the absolute dulness described had gradually diminished. The heart's sounds were less distinctly heard than before, but the breathing immediately under the clavicles was tubular. There were no râles anywhere.

A fortnight later, on July 3, *i.e.* six weeks from the date of first visit, the mother brought the child to hospital, but laughed at the notion of doing so. The patient had gained flesh, and was now perfectly healthy-looking. The clavicular regions were expanding freely, and there was scarcely appreciable change in the percussion note except under the right clavicle, where there was slight dulness. Lung-note had advanced on the cardiac area, so that the dulness was but little more than normal in extent. Tubular breathing persisted, particularly under the right clavicle. Forced breathing called into play the diaphragm far more than the supra-clavicular muscles, &c. The child spoke perfectly well, had no strabismus, held the head erect, and could run about like other children.

The patient took cod-liver oil in ʒi doses t. d., and perchloride of iron, and afterwards syrup of the iodide of iron. The most efficient remedy, however, seemed to be friction of chest and cervical regions with cod-liver oil for ten minutes three times a day. Whether it was accidental or not, it is a fact that immediately after the use of these the symptoms abated.

Remarks.—There can be no doubt, I think, that this patient had had diphtheria. The progress of the case proved

this clearly, but early on diphtheria was not suspected, and perhaps a mistake in the diagnosis on the occasion of the child's first visit was excusable. At that time most things, except the droop of the head (which was not very marked), including the history, pointed to organic disease of lung, consolidations of the apices, probable enlargement of bronchial glands, extensive bronchial catarrh, and secondary tuberculosis. I have not forgotten that the temperature was not above normal; but at the time remembered that some have asserted that tuberculosis can go on without elevation of temperature, an opinion which I did not share. I do believe, however, that in out-patient practice want of the usual elevation of temperature is not uncommon, even in cases of very extensive disease. It is not necessary for me to point out the symptoms which indicated the probabilities of the above-mentioned lesions.

The disease was, however, peculiar in many respects, and particularly as to the character of the bronchial attack, which seemed to be so extensive as judged by physical signs, and yet so unlike, in its general symptoms and course, that of an ordinary general catarrh of the tubes. A clearer history was therefore demanded, and a consequent search for symptoms likely to arise in diphtheric paralysis brought to light an extensive loss of power in various parts. Besides the evident strabismus were discovered paralyses, greater or less, of the extensors of the neck, of the muscles of the sacro-lumbar region leading to an anterior curvature of the spine, of the extremities, palate and pharynx, and of the left facial nerve. Some of these existed possibly on the occasion of the first visit, yet in such a slight degree that as nothing in the case or the history called attention to them they were passed by. On the other hand, as I have said, all things pointed in quite another direction.

Yet all the symptoms which thus pointed, I believe, were due to a diphtheritic paralysis. They obscured the diagnosis really, and after a diagnosis of paralysis had been made, remained difficult of explanation. All the physical phenomena met with at the upper parts of the thorax appear to me to have been due to a paralysis of the muscles concerned in the elevation and expansion of these parts. In consequence of this paralysis and the increased action of the diaphragm, not only were the apices reduced to the expiratory condition, but even to a condition of partial temporary collapse, or one allowing accumulation of secretion, so that there were flatten-

ing and loss of resonance with tracheal breathing, and also retraction of their edges with consequent increased cardiac dulness. And while the symptoms of bronchitis might in part be due to this same cause, I would ask whether a paralysis of the muscles of the bronchial tubes could not better explain this condition. In bronchitis of old men the râles become most abundant, and are audible without the stethoscope (as in this case) after paralysis sets in, though the external muscles are acting vigorously. There, as here, an accumulation of secretion arises, but in the one case excessively because there is excessive secretion; in the other not excessively, because there is simply want of removal of all but normal secretion; and though there was a certain amount of dyspnœa, &c., symptoms of distress did not arise as in bronchitis, because there was no fever to demand an excess of oxygen. In the paralytic condition of diphtheria no real bronchitis existed, but had it from any cause set in, a speedy death from asphyxia—no sign of which appeared—might have been expected. I know I am thus ascribing to the bronchial muscle much more influence in respiration and the removal of secretion than is ascribed to it by many modern physiologists. Reisseisen, the discoverer of the bronchial muscles, asserted their rhythmical action, and in a paper published about five-and-twenty years ago, Dr. Radclyffe Hall, of Torquay, very ably sustained arguments in favour of the power of the muscles, while Dr. Williams clearly showed that they could contract the tubes in a marked degree; and good evidence in favour of their deobstruent power has been given by several observers. The bronchial symptoms also disappeared suddenly,* as if from a sudden recovery of the ataxic muscles, while the changes ascribed to paralysis of external muscles continued for some time afterwards. By and by, however, these muscles also recovered, the apices re-expanded and almost

* As regards the paralyses themselves, it is quite possible that, being slight, they escaped the parent's attention. The mother was, however, a remarkably intelligent woman, and it seems likely that she would at least have detected any considerable alteration in the child's voice. She had, indeed, been struck by nothing more than the chest symptoms, and this could hardly be wondered at, seeing how much they predominated. The paralyses were almost all imperfect—that kind met with epecially in diphtheria, where not whole muscles, but particular bundles of particlar muscles, are affected. Probably the most decided paralysis was in the elevators of the chest.

In regard to the question of diphtheria, I afterwards ascertained that a cousin of the patient, after a visit to her aunt's place, began with sore-throat, and died 'as if from croup,' very suddenly.

recovered their normal resonance, while lung note gradually extended over the formerly increased cardiac dulness. Possibly there was some slight organic disease of the right apex, where tubular breathing persisted, but we often meet with abnormal breath-sound here in children when certainly no consolidation or excavation exists.

The case may possibly seem to be of interest, as showing how insidious diphtheritic paralysis really is, and how widely spread it may be and remain unsuspected. It shows also of what value minute histories are in obscure diseases. I have not been able to meet with a report of a similar case, and have therefore ventured to bring it before the Society. Maingault, in his essay, relates one case in which constant cough, with bronchial râles, was a prominent symptom, but there were previously well-marked signs of diphtheritic paralysis and a known attack of diphtheria. During the course of diphtheria itself, in which bronchitis occurs to greater or less degree, a sudden capillary bronchitis sometimes sets in without apparent cause when the patient is progressing favourably, and where there is apparent freedom of danger from the disease. Possibly in these cases the diphtheritic poison may cause a sudden pulmonary paralysis, so that death occurs within a few hours. In conclusion, I apologise to the Society for the length of this paper.

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